# Zebra® P630*i* & P640*i* Card Printer

# Service Manual

980006-001 Rev. A

Card
Printer
Solutions

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# 1

# General Description

## 1.1 Description

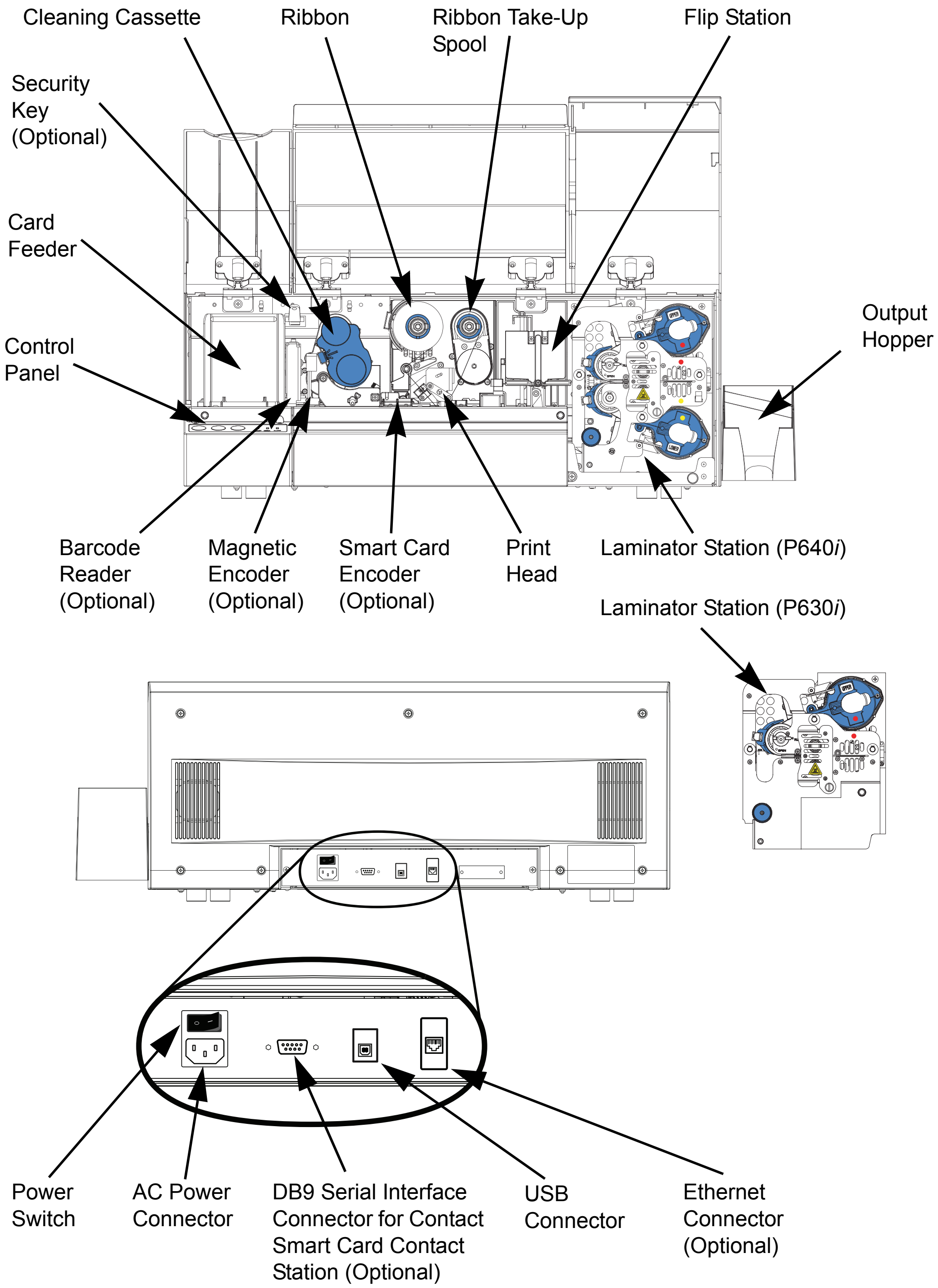
The Zebra P630*i* and P640*i* Card Printers provide high speed, full color dual-sided card printing. A micro-positioning card transport system provides enhanced color photos. A range of interface, encoder/reader, and security options allow ordering the specific configuration suitable for a particular application.

The difference between the P630*i* and the P640*i* is that the P630*i* has a single-sided laminator (i.e., it lays down and seals a laminating film on the top surface of the printed card), while the P640*i* has a dual-sided laminator (i.e., it lays down and seals laminating film on either the top surface only or both surfaces of the printed card).

References in this document that refer to either or both of the models will be in the form of "the printer" or "the P630*i*/P640*i* Printer"; references that are specific to one or the other will be in the form of "the P630*i* Printer" or "the P640*i* Printer."

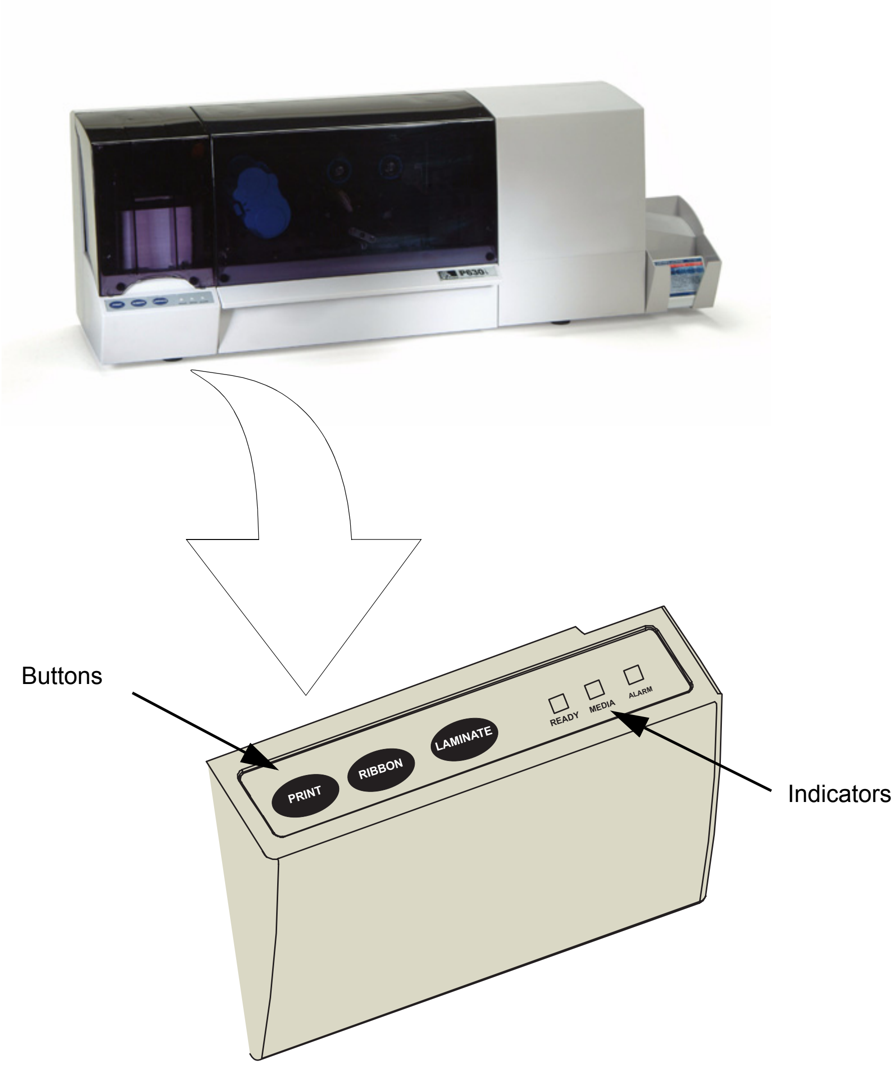
## 1.2 Printer Features

The following figure shows features of the P630*i*/P640*i* Printer.


Cleaning Cassette
Ribbon
Ribbon Take-Up Spool
Flip Station
Security Key (Optional)
Card Feeder
Control Panel
Output Hopper
Barcode Reader (Optional)
Magnetic Encoder (Optional)
Smart Card Encoder (Optional)
Print Head
Laminator Station (P640*i*)
Laminator Station (P630*i*)
Power Switch
AC Power Connector
DB9 Serial Interface Connector for Contact Smart Card Contact Station (Optional)
USB Connector
Ethernet Connector (Optional)

## 1.3 Controls and Indicators

A limited amount of control and status information is available at the Control Panel on the front of the printer. Additional control functions and status information is available via the host or networked computer(s)


Buttons
PRINT
RIBBON
LAMINATE
READY
MEDIA
ALARM
Indicators

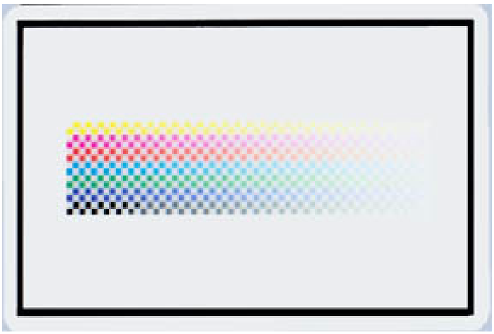
.

# Control Panel Buttons

## PRINT Button

**Note •** The PRINT button can be disabled via the printer driver; see Advanced Utilities: on page 73.

Press the **PRINT** button to print the image stored in the printer's memory. When the printer is powered up, the memory is loaded with a checkerboard test pattern.



In regular on-line use, the **PRINT** button reprints the last image downloaded from the computer to the buffer memory. If you hold the **PRINT** button down and power up the printer, the Ribbon Synchronization feature (which normally forces a ribbon synchronization whenever the door is closed or the printer is powered up) is disabled.

If you press and hold the **PRINT** button for more than two seconds, the printer will continuously reprint the image in the buffer. Stop this action by pressing the button momentarily while printing is in process

Note that pressing the **PRINT** button will have no effect if any of the following applies:

- An error condition exists.
- You have set up the print driver to print color on both sides of the card.
- The optional hardware lockout key, ID/Key, is missing (but this does not disable the checkerboard printout available after power-up).

## RIBBON button

**Note •** The RIBBON button can be disabled via the printer driver; see Advanced Utilities: on page 73.

This button is used to synchronize the ribbon – in other words, to position it correctly under the print head. If you hold the **RIBBON** button down and power up the printer, it toggles on/off the Ribbon Synchronization feature when the door is closed.

In standard applications, the ribbon type is YMCK, and the back of the card is printed first. In such cases, pressing the **RIBBON** button will advance the color ribbon to bring the leading edge of the next black panel under the print head.

## LAMINATE button

**Note •** The LAMINATE button can be disabled via the printer driver; see Advanced Utilities: on page 73.

(For the P640*i* Printer, this applies to the Upper and Lower Laminator; the P630*i* Printer has only the Upper Laminator.)

If either (or both) of the laminate transfer rollers is not loaded with a laminate patch, then pressing the **LAMINATE** button will correct the condition, provided the cassette is not out of laminate, and if the cassette latch is closed (locked).

If both transfer rollers are already loaded, the **LAMINATE** button has no effect.

If you hold the **LAMINATE** button down and power up the printer, it toggles on/off the Ribbon Synchronization feature when the printer is powered up.

A standard use of the **LAMINATE** button is in reloading a transfer roller after removing the first hand-cut patch of laminate following installation of a fresh roll.

## Control Panel Indicators

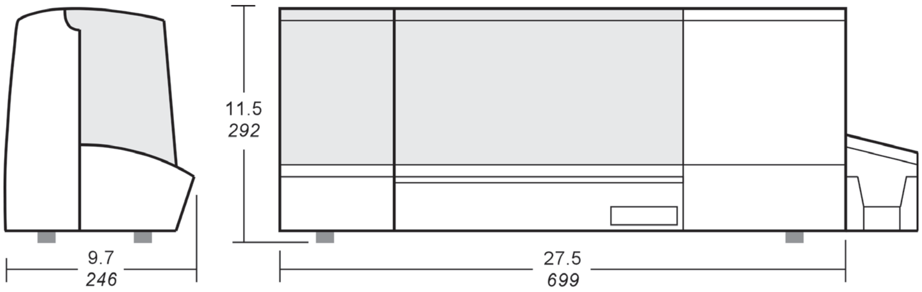
Depending on the condition they are reporting, the three indicator lights, READY, MEDIA, and ALARM, can be in one of three states: Off, On (steady), or Flashing.

**Note •** The READY indicator is bi-colored. Its two color channels, **green** and **yellow**, function independently.

| | | |
|---|---|---|
| **READY Indicator** | **Green:** | Steady = Ready to print.<br>Flashing = Printer busy. |
| | **Yellow:** | Steady = Laminator(s) in sleep mode.<br>Flashing = Laminator(s) not at operating temperature. |
| **MEDIA Indicator** | **Orange:** | Off = Normal.<br>Steady = Any media outage.<br>Flashing = Magnetic encoding failure. |
| **ALARM Indicator** | **Red:** | Off = Normal.<br>Steady = Error condition requiring intervention.<br>Flashing = Printhead temperature error, or major internal control problem requiring power cycling of the printer (OFF, pause, then ON). |

## 1.4 Specifications -- P630*i* / P640*i*

| | |
|---|---|
| Card size: | Dimensions: 54 mm x 86 mm (2.125" x 3.375") nominal<br>Thickness: .75 mm (.03 in) ± 10%, frequently referred to as “30 mil cards” |
| Card hopper: | 150 cards |
| Throughput: | 120 cards per hour dual-sided printing (YMC on front, K on back) and laminating |
| Print system: | Single printhead, with flip station for front and back printing. Dye sublimation for YMC colors, and thermal mass transfer for K and Uv panels (K = opaque black resin, Uv = clear ultraviolet-visible resin). |
| Printhead resolution: | 300 dpi |
| Image size (user selectable): | 952 pixels x 578 pixels, Standard<br>952 pixels x 600 pixels, Oversize 1<br>968 pixels x 610 pixels, Oversize 2 |
| Magnetic stripe encoder (option): | Hi-Co type. 3-track, ISO and AAMVA compatible. |
| Cleaning system: | Both card faces cleaned by high-tack roller. Roller is refreshed automatically by transfer tape at selectable intervals (default 10 cards, user-selectable 1 - 20 cards). |
| Laminating system: | P640i: Separate laminators for front and back surfaces of card.<br>P630i: Single laminator for front surface of card.<br>Waste-free design with built-in cutters. Continuous 1 mil (0.025 mm) thick polyester film in re-loadable cassettes. |
| Controls: | Print, Ribbon advance, Laminate advance |
| Indicators: | Ready to print, Media outage, Alarm |
| Data interface: | USB, 10/100 Mbps Ethernet (option) |
| Windows drivers: | Plug-and-Play 2000, XP |
| Security features: | ID/Key (option), an ID/Code, and a printer-to-PC password lockout |
| Compliances: | FCC Class A, UL/IEC/EN 60950-1 |
| Voltage & frequency: | 110 - 220 VAC, 50/60Hz |
| Power requirements: | Printing + Laminating:<br>200 Watts Typical (after warm-up)<br>340 Watts Maximum |
| Environment: | Operating: $50^{o}$ to $95^{o}$F ($10^{o}$ to $35^{o}$C), 20 to 80% RH non-condensing.<br>Storage: $-4^{o}$ to $158^{o}$F ($-20^{o}$ to $70^{o}$C), 5 to 90% RH non-condensing |
| Net weight: | 35 lb. (15.9 kg) net. Shipping weight 43 lb. (19.5 kg). |
| Dimensions: | |



# 1.5 Declarations of Conformity

| | | | |
|---|---|---|---|
| 89/336/EEC modified by 92/31/EEC and 93/68/EEC | EMC Directive | EN 55022 (1998) | RF Emissions control |
| | EMC Directive | EN 301489-3 V1.4.1 | RF Emissions and Immunity for radio equipment |
| | EMC Directive | EN55024 (2001) | Immunity to Electro-Magnetic Disturbances |
| 73/23/EEC modified by 93/68/EEC | Low voltage Directive | EN 60950-1 (2001) | Product safety |
| 1999/5/CE | R&TTE Directive | EN300330-2 V1.1.1 | Radio Frequency Interferences |

For a formal certificate, please contact the Compliance Office at Zebra’s Camarillo facility.

**EUROPE:** Norway Only: This product is also designed for IT power system with phase to phase voltage 230V. Earth grounding is via the polarized, 3-wire power cord.

FI: “Laite on liitettävä suojamaadoitus koskettimilla varustettuun pistorasiaan”
SE: “Apparaten skall anslutas till jordat uttag”
NO: “Apparatet må tilkoples jordet stikkontakt”

## FCC Regulations

Model P630*i* / P640*i* has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and operated in accordance with the User’s Manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Pursuant to Part 15.21 of the FCC Rules, any changes or modifications to this equipment not expressly approved by Zebra may cause harmful interference and void the FCC authorization to operate this equipment.

### FCC Radiation Exposure Statement (applicable to 15.247 device only)

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum 20 cm between the radiator and your body. This transmitter must not be collocated or operating in conjunction with any other antenna or transmitter unless authorized to do so by the FCC.

## Industry Canada Notice

This device complies with Industry Canada ICES-003 class A requirements.

Cet équipement est conforme à l 'ICES-003 classe A de la Norme Industrielle Canadienne.

# 1.6 Icons

Throughout this manual, different icons highlight important information, as follows:

**Note** • Indicates information that emphasizes or supplements important points of the main text.

**Important** • Advises you of information that is essential to complete a task, or points out the importance of specific information in the text.

→ Provides an example or scenario to demonstrate or clarify a section of text.

---

**Electrostatic Discharge Caution** • Warns you of the potential for electrostatic discharge.

---

**Electric Shock Caution** • Warns you of a potential electric shock situation.

---

**Hot Surface** • Warns you of a situation where excessive heat could cause a burn.

---

**Caution** • Advises you that failure to take or avoid a specific action could result in physical harm to you, or could result in physical damage to the hardware.

# 2

# Installation and Setup

## 2.1 General Information

This section will guide you through the installation and setup of your printer. This consists of the following procedures, which should be performed in the order presented.

2.2 Unpacking the Printer . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 12
2.3 Setting up the Printer. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 15
2.4 Connecting Power . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 32
2.5 Connecting the Printer to your Computer . . . . . . . . . . . . . . . . . . . . . . . . 33
2.6 Installing the Printer Driver. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 34
2.7 Changing the Printer Driver Options (Properties). . . . . . . . . . . . . . . . . . 53
2.8 Changing the Printing Preferences . . . . . . . . . . . . . . . . . . . . . . . . . . . . 77
2.9 Packing the Printer for Shipment . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 89

The procedure to be followed for *Packing the Printer for Shipment* is given at the end of this section.

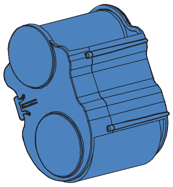
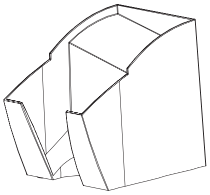
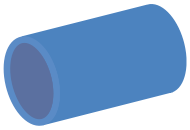
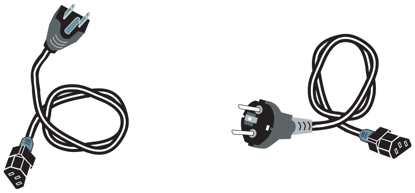
# 2.2 Unpacking the Printer

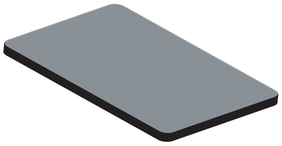
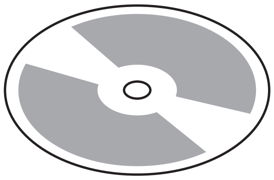
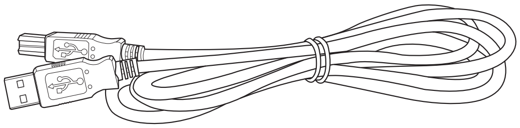
## Remove the Printer from the Shipping Carton

**Step 1.** Open and remove the plastic handle/latches on either end of the shipping carton.

**Step 2.** Lift the upper part of the shipping carton off the lower part.

**Step 3.** Remove the items from the cutouts in the foam block atop the printer. Verify that the following items are included:

| | |
|---|---|
| Printed Quick-Start Guide | |
| Cleaning Cartridge |  |
| Output Hopper |  |
| Ribbon Take-up Spool |  |
| Two Power Cords |  |

| | |
|---|---|
| Card Weight |  |
| Documentation & Driver CD |  |
| USB Interface Cable |  |

**Step 4.** Remove the foam block from the top of the shipping carton.

**Step 5.** Lift the printer from the shipping carton.

**Caution** • The printer weighs approximately 15.9 kg (35 lbs).

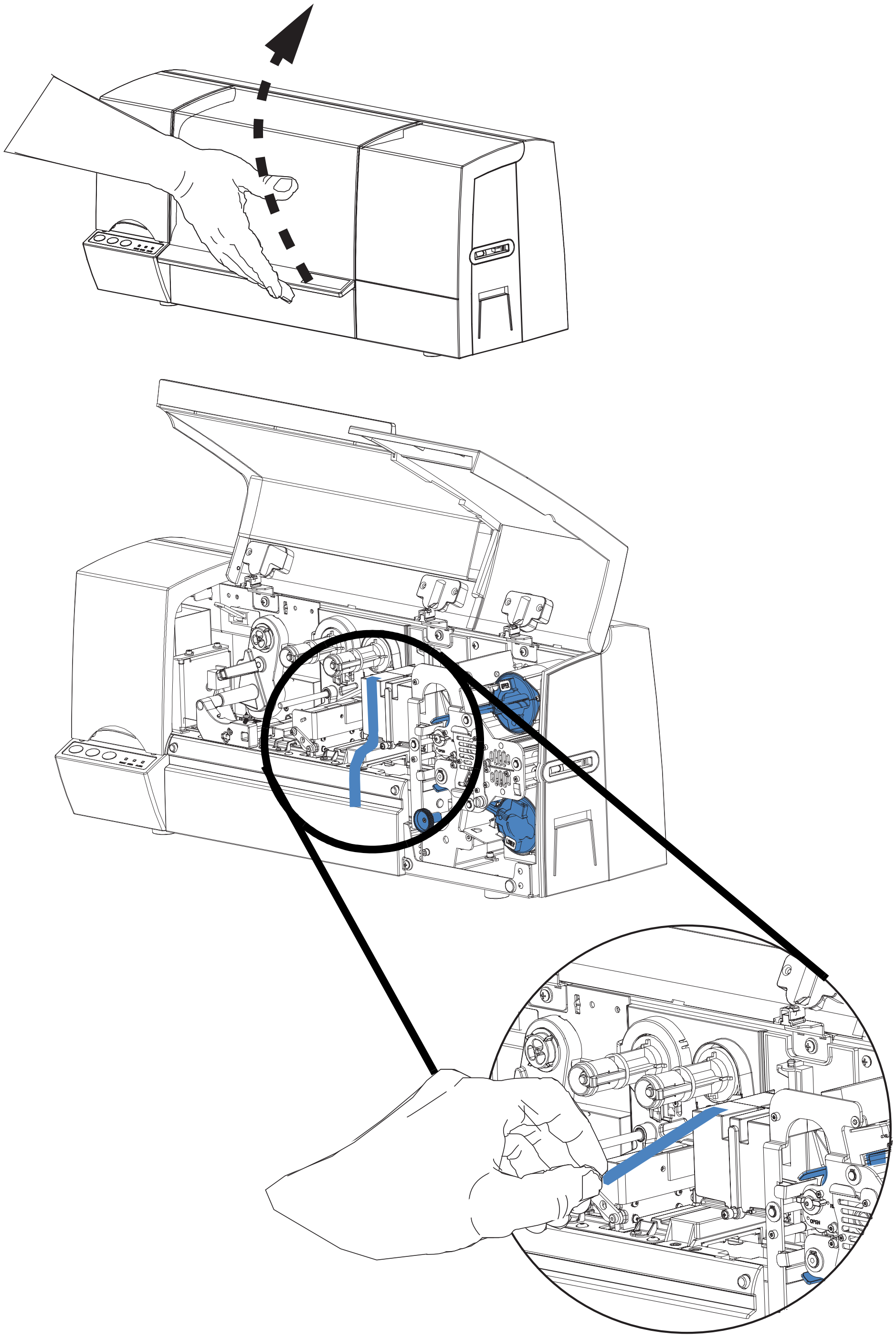
**Step 6.** Remove the protective plastic bag from the printer.

**Important** • Save all the packing material and the shipping carton in case the printer needs to be moved or shipped. If the original material is lost or damaged, a replacement Shipping Kit can be ordered from Zebra.

**Step 7.** Place the printer in a location that meets the following requirements:

- A reasonably dust- and dirt-free environment will give better print quality.
- Flat surface at least 699 mm (27.5 in) x 246 mm (9.7 in) that can support the weight of the printer; additional space preferred. Vertical clearance at least 450 mm (17.7 in). Clearance between the back panel and any wall at least 100 mm (3.9 in). There should be easy access to all sides of the printer.
- Temperature within the range of 10° to 35°C (50° to 95°F).
- Relative Humidity 20 to 80%, non-condensing.
- AC power accessible.

**Step 8.** Open the printer Main Cover. Locate and remove the blue tape that secures the flip station in position.

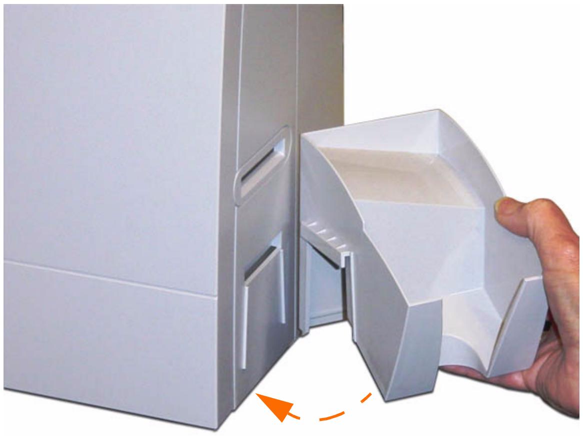


# 2.3 Setting up the Printer

## 2.3.1 Attaching the Output Hopper

The Output Hopper is positioned on the right side of the printer to receive the printed cards.

**Step 1.** Install the Output Hopper by inserting the tab on the left side of the Output Hopper into the slot on the right side of the printer.

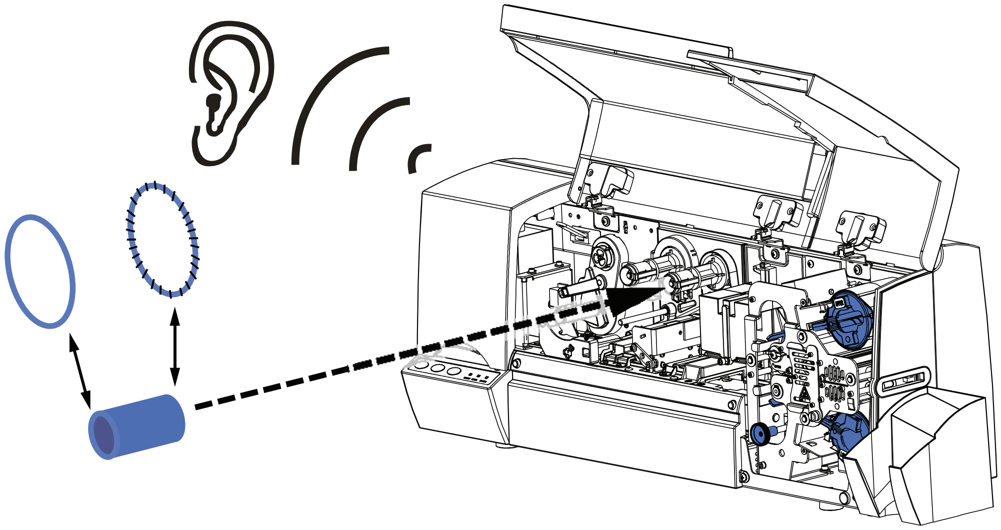


**Step 2.** Ensure the lip on the Output Hopper locks securely in the slot in the Printer.

## 2.3.2 Installing the Ribbon

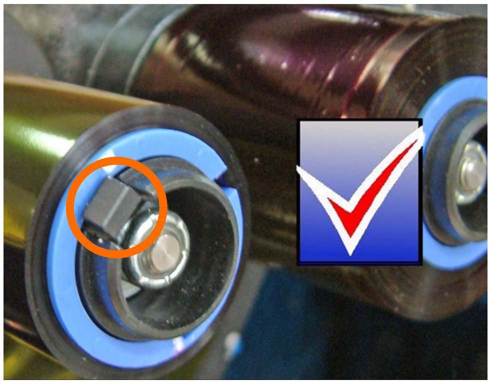
### 2.3.2.1 Attach Take-Up Spool

**Step 1.** Attach the Ribbon Take-Up Spool by sliding it onto the Ribbon Take-Up Spindle and pressing it straight back until in clicks into place.

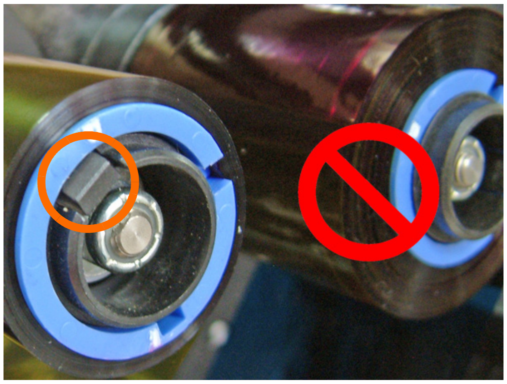


**Important** • Make sure that the Ribbon Take-Up Spool is attached with its “toothed” end toward the rear of the printer.

The two figures below show the right and wrong ways to insert the printing ribbon on either spindle.



Right way: the clip is OVER the core.



Wrong way: the core is not pushed fully against the back side, resulting in a Y border on the printed cards.

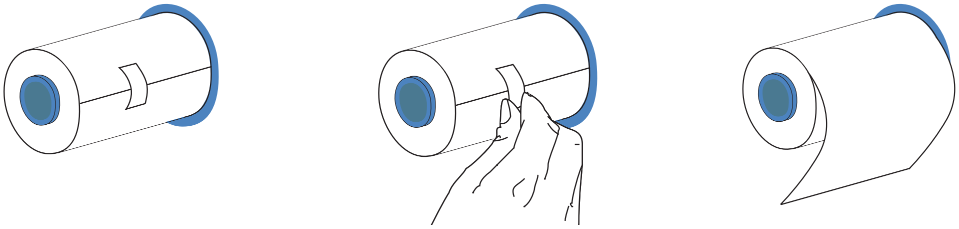
### 2.3.2.2 Install the Ribbon

**Note** • In normal printer operation, when the ribbon is exhausted, a warning message appears on the monitor and the MEDIA indicator on the printer lights.

**Step 1.** Open the printer Main Cover. The printhead will raise for easy ribbon loading.

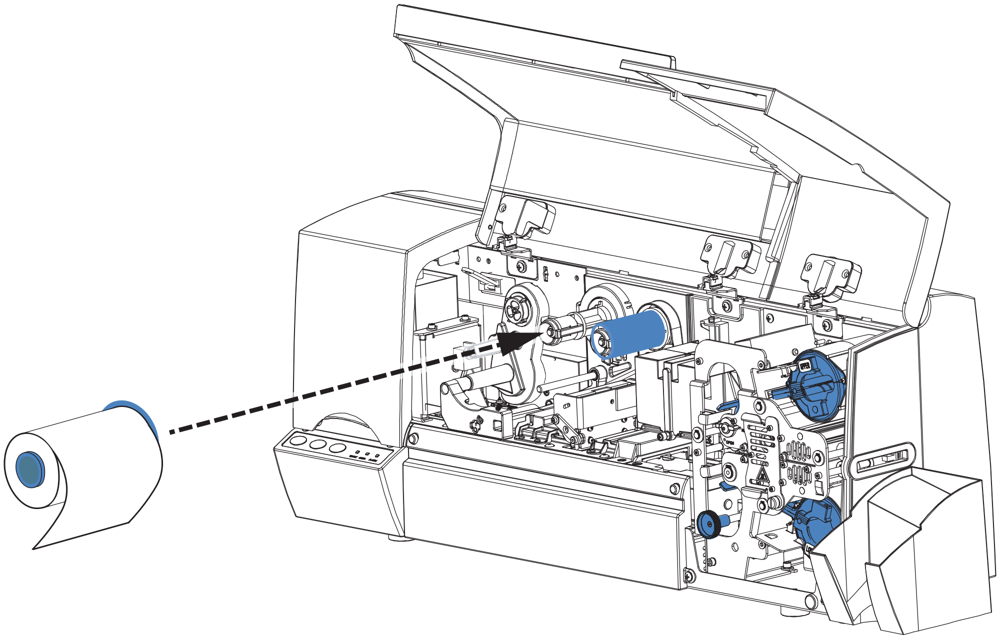
**Step 2.** If present, remove the used Supply and Take-Up Spools.

**Step 3.** Remove the ribbon from its packaging. Remove the tape that holds the end of the ribbon (save this tape; it will be used shortly).



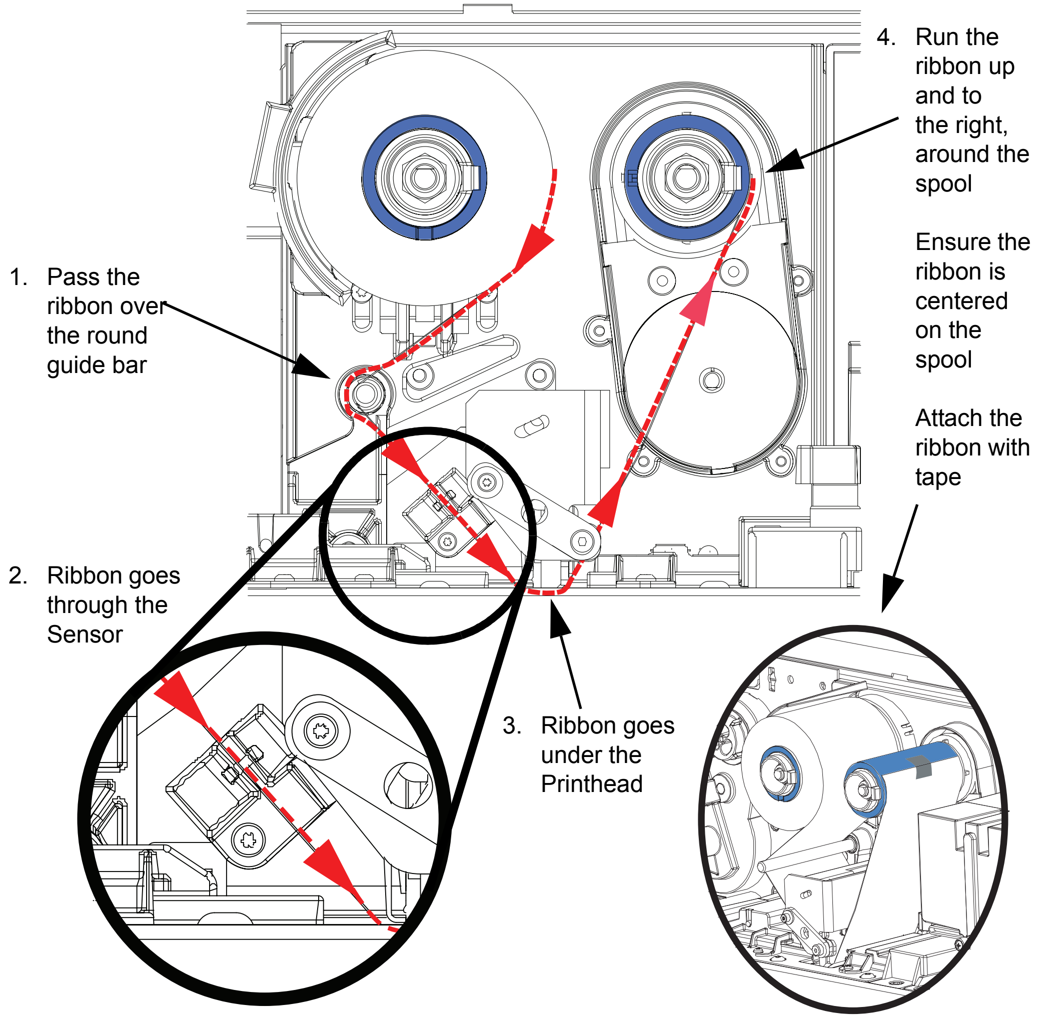
**Step 4.** Install the Ribbon on the left (supply) spindle, with the free end of the ribbon coming from the roll pointing down to your right.

**Note** • Note that the “flanged” end of the ribbon spool is toward the rear of the printer, and make sure the internal grooves on the core engage the teeth on the supply spindle.



**Step 5.** Route the Ribbon as shown in the figure below. The Ribbon Supply Spindle is free-wheeling; pull ribbon off it as needed. If the tape removed from the new ribbon in Step 3 is undamaged, use it to attach the end of the ribbon to the Take-Up Spool; otherwise use other adhesive-backed tape.

**Important •** When the end of the ribbon is attached to the Take-Up Spool, slack in the ribbon can be taken up by rotating the Ribbon Supply Spool; do not try to turn the Take-Up Spool.



1. Pass the ribbon over the round guide bar
2. Ribbon goes through the Sensor
3. Ribbon goes under the Printhead
4. Run the ribbon up and to the right, around the spool

Ensure the ribbon is centered on the spool

Attach the ribbon with tape

**Step 6.** Close the printer Main Cover. Press the RIBBON button on the Control Panel to synchronize the color ribbon. If the MEDIA light fails to go out, check the Ribbon Sensor.

**Caution •** Color ribbon wrinkling and “fold-over” can seriously affect print quality

**Step 7.** Re-open the printer cover to inspect the ribbon path for wrinkles and folds. Correct if necessary, then close the cover. If you do not then hear the ribbon motor advancing the ribbon, press the RIBBON button.

## 2.3.3 Installing the Cleaning Cassette

Before being printed, each surface of the card is cleaned by a soft tacky roller that is itself cleaned periodically by adhesive tape in the Cleaning Cassette. By default, the roller is cleaned every 10 cards. The printer driver software allows the card count to be modified.

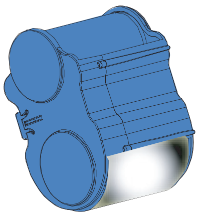
> By cleaning the roller every 10 cards, the Cleaning Cassette contains sufficient tape for 3,000 cards.

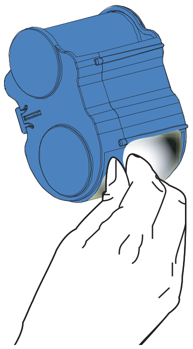
**Step 1.** Open the main cover of the printer.

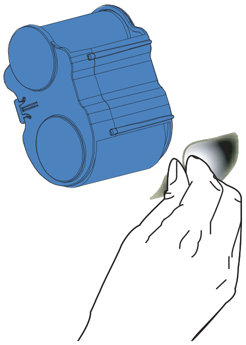
**Step 2.** If present, remove the used Cleaning Cassette.

**Step 3.** Remove the Cleaning Cassette from its packaging.

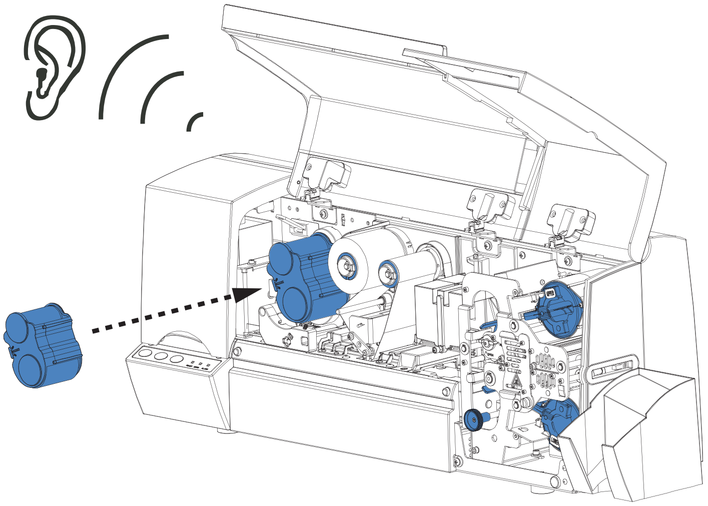
**Step 4.** Remove the protective foil from the Cleaning Cassette. Avoid touching the exposed tacky surface.







**Step 5.** Install the Cleaning Cassette on the printer by locating the rectangular pin on the cleaning mechanism in the receptacle on the cassette. Push the cassette gently home, ensuring that the internal grooves on the upper spool engage the teeth on the take-up drive; you will hear a click when it is fully engaged. Note that you may need to move the take up side of the cleaning tape assembly to allow for full engagement.



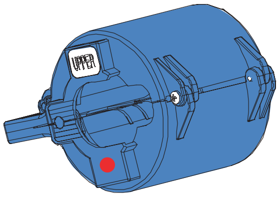
## 2.3.4 Loading Laminate

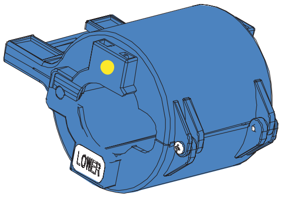
**Note •** In this description of loading laminate, references to the lower Laminate Cassette apply only to the P640*i* Printer. The P640*i* Printer can apply laminate to both surfaces of the card; the P630*i* Printer only to the upper surface.

The Laminate (laminating film) is loaded into cassettes to protect it from dirt or other contaminants.

See the figure below. The “Upper Laminate Cassette”, used on both the P630*i* and P640*i* Printers, has a label with the word “UPPER” and another “label” of a **red** dot. The “Lower Laminate Cassette”, used only on the P640*i* Printer, has a label with the word “LOWER” and another “label” of a **yellow** dot.

“Upper
Laminate
Cassette”
(P630*i* and
P640*i*)

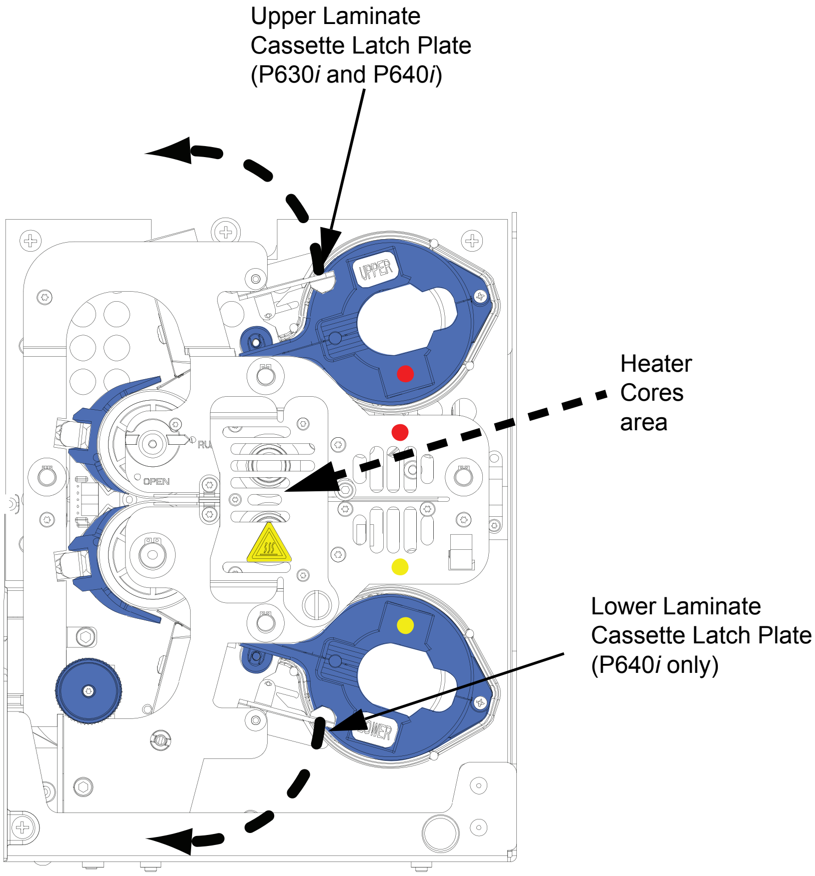




“Lower
Laminate
Cassette”
(P640*i* only)

### 2.3.4.1 Removing the Laminate Cassette(s)

**Step 1.** The Laminate Cassette(s) (Upper only for the P630*i* Printer; Upper and Lower for the P640*i*) are held in position by latch plates. The Upper Cassette is freed by turning its Latch Plate counter-clockwise to a full vertical position; the Lower Cassette (only present on the P640*i* Printer) is freed by turning its Latch Plate clockwise. Then pull the cassette straight out from its holder.


Upper Laminate Cassette Latch Plate (P630*i* and P640*i*)
Heater Cores area
Lower Laminate Cassette Latch Plate (P640*i* only)
UPPER
OPEN

---

**Hot Surface** • If the printer has been in use, the Heater Cores area of the Laminator may be hot.

---

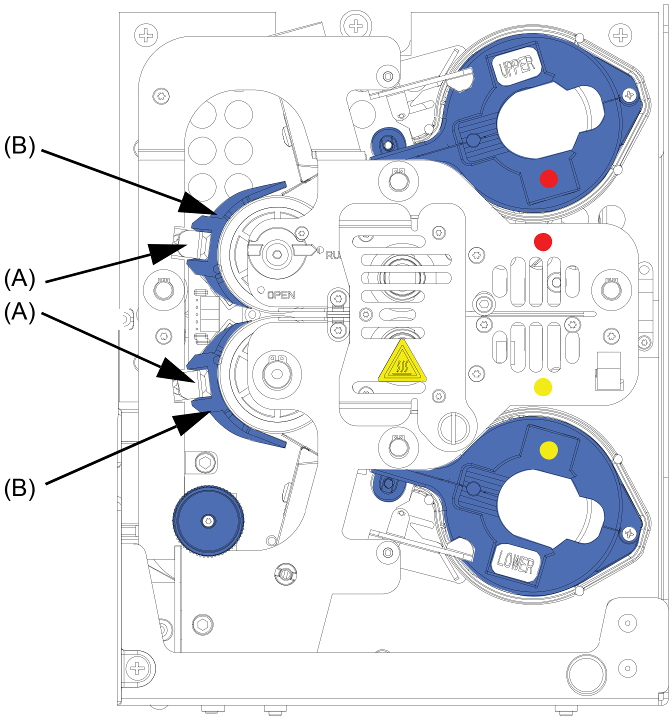
**Important** • If either Latch Plate is opened, even unintentionally, the corresponding Cassette must be removed and the Laminate reeled in.

---

**Caution** • If you feel resistance when removing the cassette, the laminate has likely run out, leaving one end attached to the core and the other end under the cutter. Keep tugging on the cassette, which will come free with a short tail of laminate.

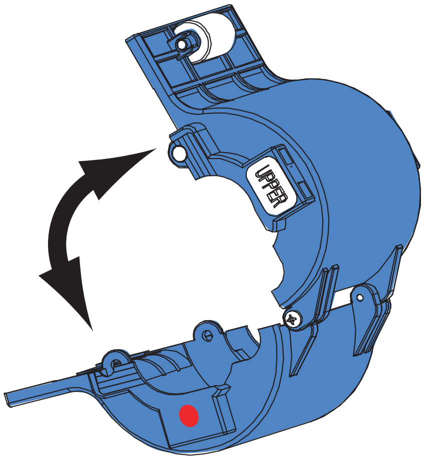
---

**Step 2.** If there is a suspicion a patch is blocked somewhere, temporarily remove the corresponding Transfer Guide to be sure there are no scraps of laminate remaining. If there are any, remove them. Then slide the Transfer Guide back in until it is held in place by the Retaining Spring.



1. Push and hold the Retaining Springs (A) to the Left
2. Slide the Transfer Guides (B) Straight Out
3. Release the Retaining Springs (A)

**Step 3.** Open the Cassette, like a clam shell, by separating its two halves. Grasp the two halves firmly with your fingers, then pull it apart. ***Do NOT use tools***. (Upper Cassette shown.)



**Step 4.** If there is an empty laminate core in the Cassette, remove it.

### 2.3.4.2 Loading the Laminate Cassette(s)

**Important** • If you are using partial-width laminate in the Lower Cassette of a P640*i* Printer, read the following section, *Using Partial-Width Laminate*, before proceeding with this procedure. (Partial-width laminates are frequently used on the bottom surface of cards that have a signature panel or a magnetic stripe.)

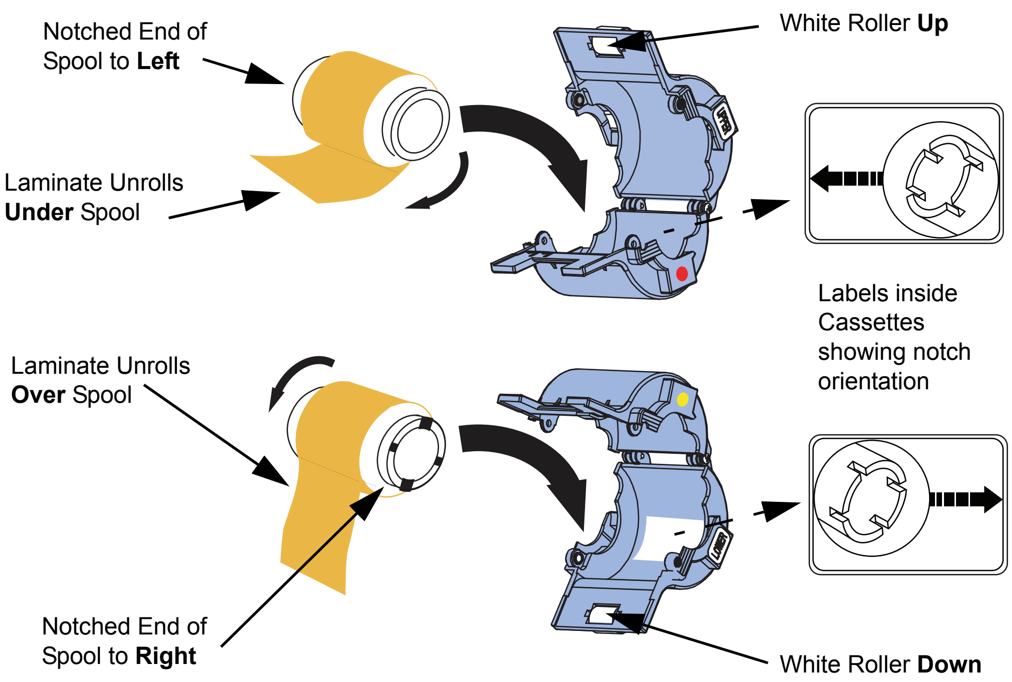
**Important** • The Upper and Lower Laminate Cassettes (the lower one only used on the P640i Printer; the upper one used on both printers) are loaded differently, even though the Cassettes appear virtually the same.

**Note** • Handle the laminate by the ends of the spools to avoid contaminating the laminate.

**Step 1.** Remove the new roll of laminate from its packaging.

**Step 2.** Carefully following the guidelines in the following figure, place the laminate in the Cassette.

**Upper Cassette**
**(Used on Both P630*i* and P640*i*)**


Notched End of Spool to **Left**
White Roller **Up**
Laminate Unrolls **Under** Spool
UPPER
Labels inside Cassettes showing notch orientation
Laminate Unrolls **Over** Spool
LOWER
Notched End of Spool to **Right**
White Roller **Down**

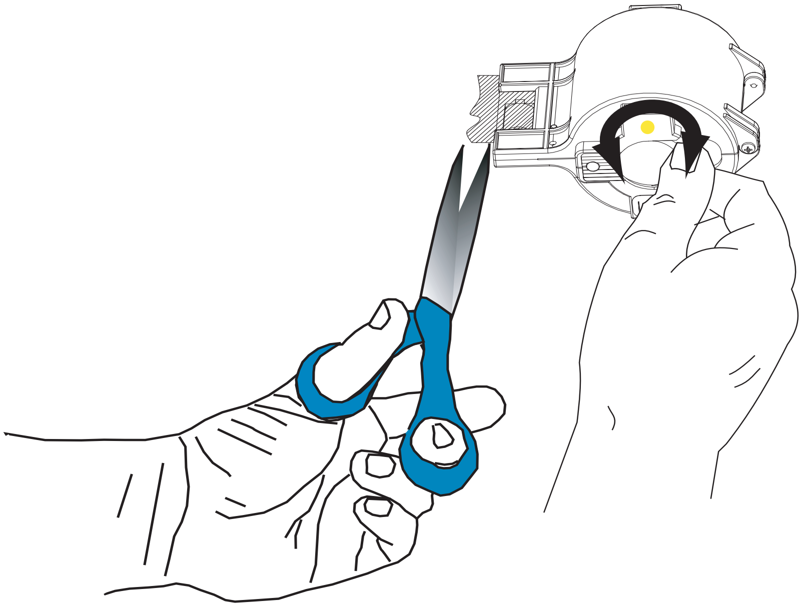
**Lower Cassette**
**(Used on P640*i* Only)**

**Step 3.** Pull out an inch or two of laminate past the lip of the cassette.

**Step 4.** Close the cassette by firmly pressing the “clamshell” together. You will hear a click and feel a detent when the halves of the cassette seat together.

**Step 5.** Pull out a little more laminate between the lips of the cassette. If it suddenly stops, resisting further pulling, a spring detent on the cassette has probably snagged a notch on the end of the core. This means that the core was installed the wrong way. Open the cassette and re-install the laminate.

**Step 6.** If the exposed end of the laminate is uneven or crinkled, cut it as square as you can with scissors.



**Step 7.** Holding the cassette with the white roller up and pointing to your left, rotate the core counter-clockwise to reel in the laminate. Stop when the end of the laminate is even with the edge of the lips of the cassette.

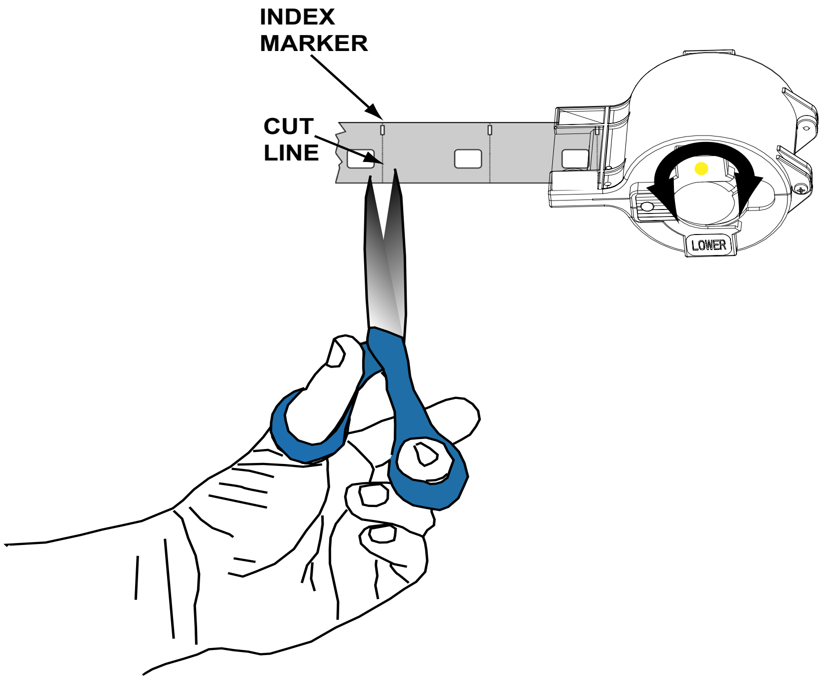
**Important** • Check for overhang any time the cassette latch is opened or the cassette is removed.

### 2.3.4.3 Laminating Contact Smart Cards

The laminating patch on the top surface of a smart card has a rectangular aperture to expose the card's electrical contacts. In all other respects the laminating process for smart cards is the same as for ordinary cards. Note that this procedure also applies to registered laminates.

The special laminate for the top cassette is punched with a repeated pattern. Loading procedure for smart card laminate is exactly the same as for standard laminate.

**Note •** Check if the patch roll is centered on the core; if not, gently tap the roll on a flat surface to re-center it.



The smaller hole is an index marker that tells the printer where to cut the laminate, ***exactly*** splitting the index hole (the printer driver allows adjustment of the cut location).

After loading the Smart Card laminate in the upper cassette, trim the laminate along the cut line as shown above.

**Note •** When using smart card or registered laminates, the laminate length value in the driver may need to be adjusted; see Laminate Station Adjustment on page 64.

### 2.3.4.4 Using Partial-Width Laminate

**Note •** Since partial-width laminates are only used for the back (i.e., lower) surface of the card, this section only applies to the P640*i* Printer.

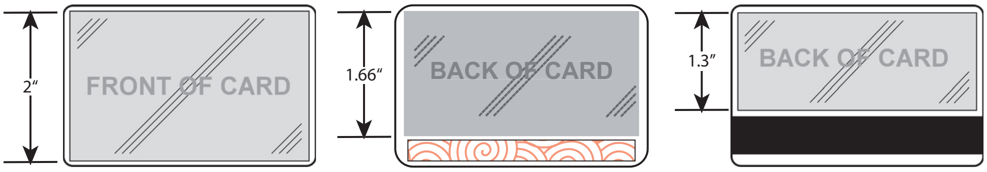
Laminate come in three widths:

“Full-Width” laminate is 2 in (51 mm) wide. Full-width laminate is used on the front (i.e., upper) or back (i.e., lower) surface of the card.

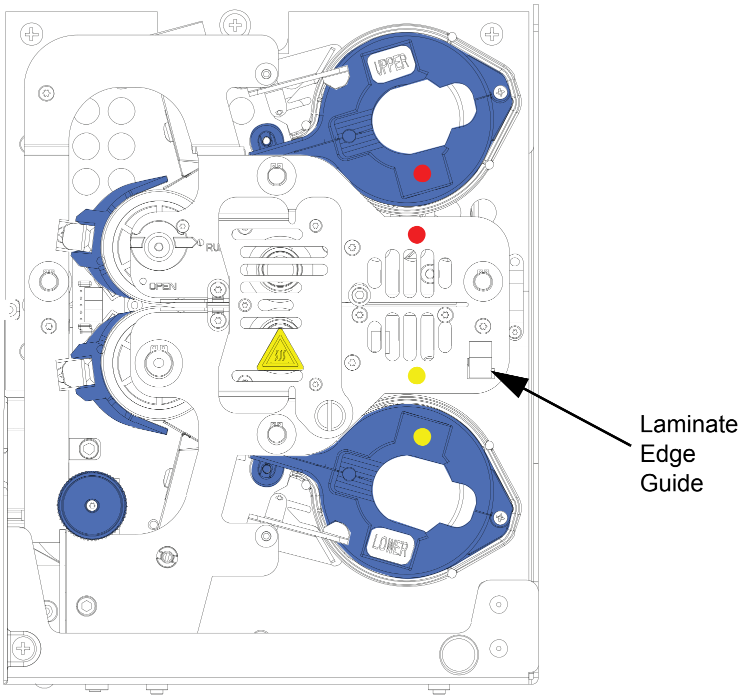
“Partial-Width” laminate is available in two widths:

- 1.66 in (42mm) wide laminate is used for cards with a writable signature panel.
- 1.33 in (33 mm) wide laminate is used for cards with a magnetic stripe

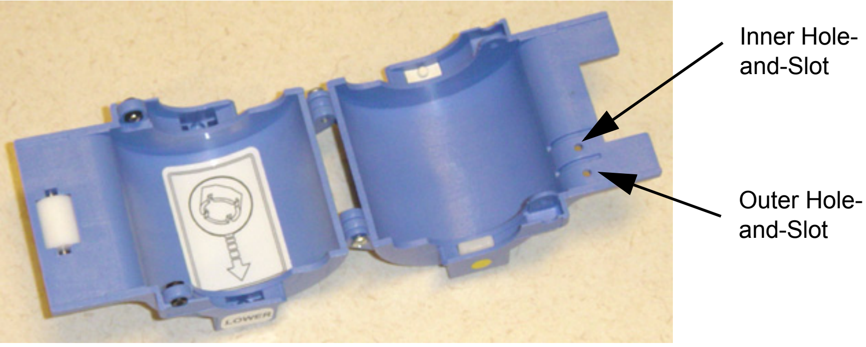
If there is no signature panel or magnetic stripe on the back of the card, full-width laminate would generally be used. These are shown in the following figure.

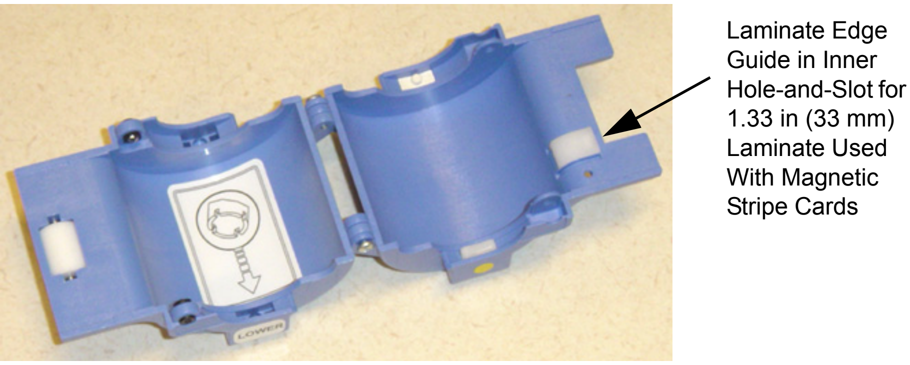


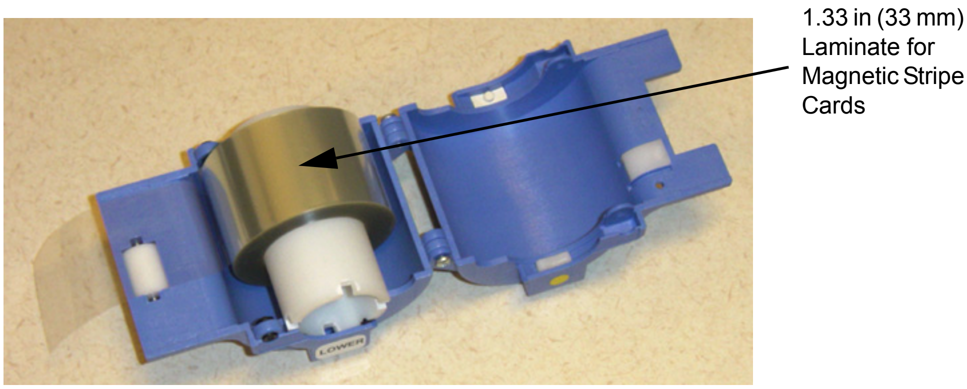
**Step 1.** Remove the Laminate Edge Guide from its “storage location” on the Laminator Frame (it snaps out).



**Step 2.** For 1.3 in (33 mm) laminate for use with magnetic stripe cards, snap the Laminate Edge Guide into the inner hole-and-slot in the lower cassette, as shown in the following pictures. For 1.66 in (42 mm) laminate for use with signature-stripe cards, use the outer hole-and-slot.

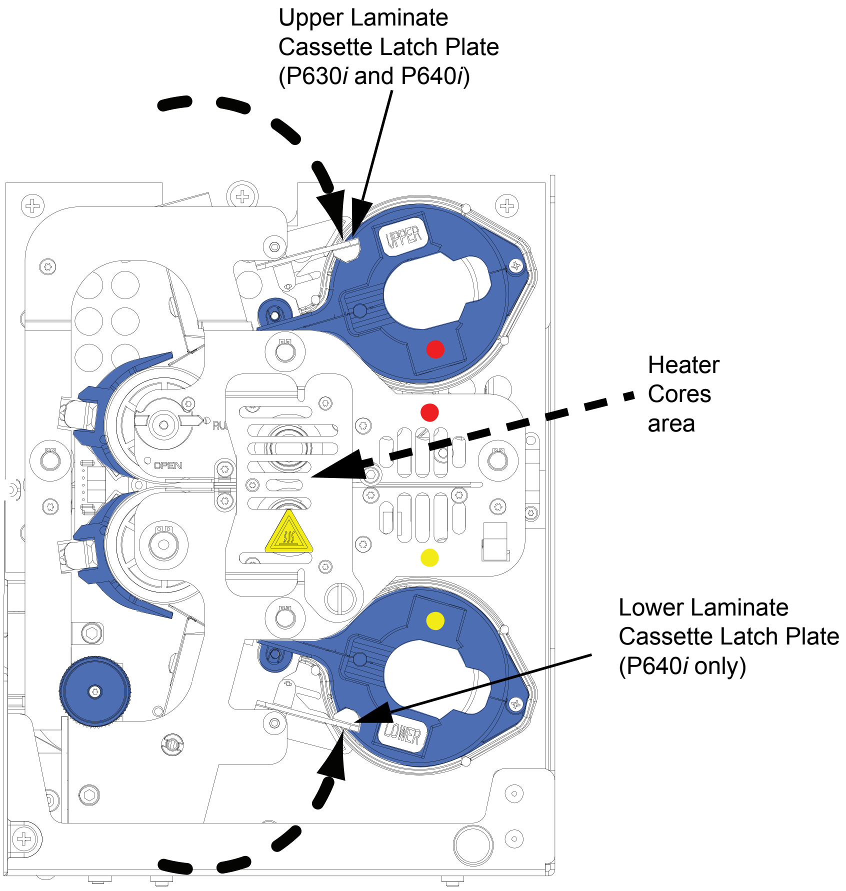

Inner Hole-and-Slot
Outer Hole-and-Slot
LOWER


Laminate Edge Guide in Inner Hole-and-Slot for 1.33 in (33 mm) Laminate Used With Magnetic Stripe Cards
LOWER


1.33 in (33 mm) Laminate for Magnetic Stripe Cards
LOWER

### 2.3.4.5 Installing the Laminator Cassette(s)

**Step 1.** Insert the cassette into its black molded pocket, then close the cassette latch (clockwise for the UPPER, counterclockwise for the LOWER).


Upper Laminate Cassette Latch Plate (P630*i* and P640*i*)
UPPER
Heater Cores area
OPEN
Lower Laminate Cassette Latch Plate (P640*i* only)
LOWER

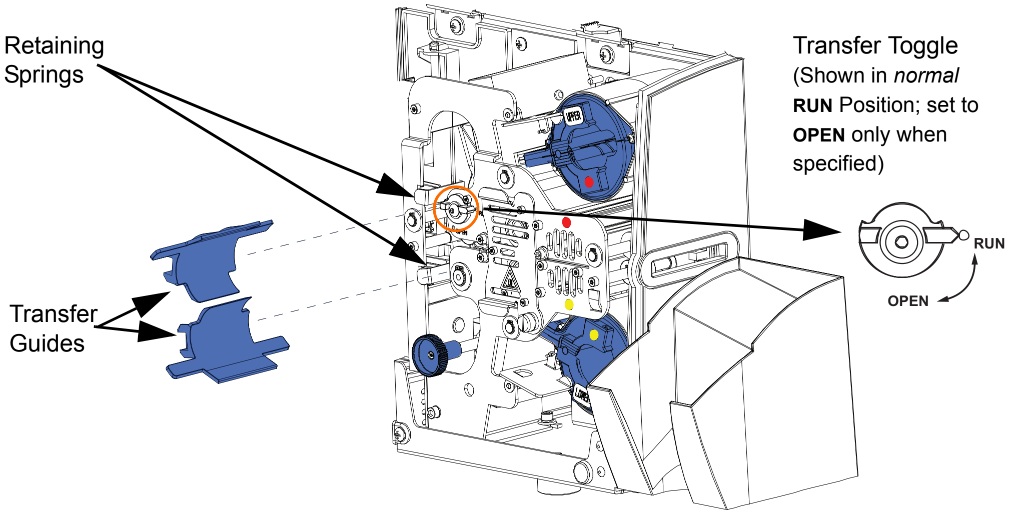
**Step 2.** Close the main cover. If there was a laminate error before you replaced the cassette, laminate will automatically feed from the just-loaded cassette, followed by a cutting action to free a "patch" of laminate onto the transfer roller. If laminate does not feed automatically, press the LAMINATE button on the printer control panel.

### 2.3.4.6 Clearing the Laminate Channels

If your scissor cuts were neat enough to pass for machine-made cuts, continue with printing cards. If not, do not waste a print cycle. Instead, remove the hand-cut patch(es) from the Transfer Roller(s) as follows.

**Note** • Clearing procedures for the upper and lower laminate channels are similar. The upper channel is shown here.

Removal of the Transfer Guide gives access to the Transfer Roller.


Retaining Springs
Transfer Toggle
(Shown in *normal* **RUN** Position; set to **OPEN** only when specified)
RUN
OPEN
Transfer Guides

**Step 1.** Push the Retaining Spring to the left; pull the Transfer Guide straight out toward you.

**Step 2.** Remove and discard the laminate patch on the Transfer Roller. Never re-use!

**Step 3.** If needed, turn the Transfer Toggle to the OPEN (vertical) position.

**Step 4.** Remove any laminate between the Transfer Rollers.

**Step 5.** Return the Transfer Toggle to the RUN (horizontal) position. Note that the laminate will not feed and place correctly if transfer toggle is not in RUN position.

**Step 6.** Re-install the Transfer Guide with its top edge above the laminate cutter guide. Pull back the Retaining Spring while re-inserting the Transfer Guide, then release the spring when the guide is pushed into place.

**Step 7.** Press the LAMINATE button to load the Transfer Roller(s).

**Important** • Improper replacement of the Transfer Guide can cause laminate skewing and mis-feeding. Be sure the Transfer Toggle is set to RUN (horizontal). Take care to avoid damaging the Transfer Roller ribs when replacing the Transfer Guide.

Observe the orientation of the Transfer Guides. If they are up-side down, you risk breaking the rims on the rollers.

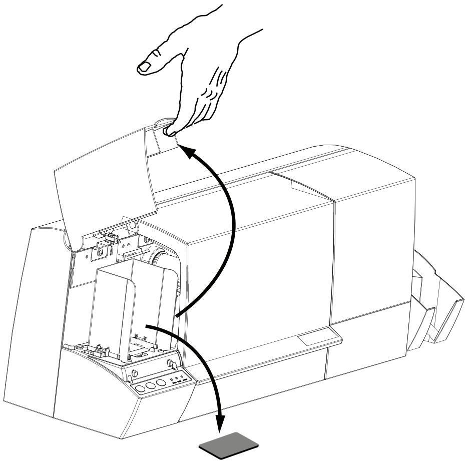
## 2.3.5 Loading Cards

The P630i and P640i Printers use standard ISO CR-80 PVC Composite cards. Do not use cards with a paper or peel-off / adhesive backing.

- Size 54 x 86 mm (2.125 x 3.375 in) nominal (refer to ISO Specification for exact dimensions and tolerances)
- Thickness .75 mm (.03 in) ± 10%, frequently referred to as “30 mil cards”

**Important** • Do not bend cards or touch the print surfaces as this can reduce print quality. The surface of the cards must remain clean and dust free. Always store cards in an enclosed container. Ideally, use cards as soon as possible.

**Step 1.** Open the Card Feeder Cover; and if present, remove the Card Weight.



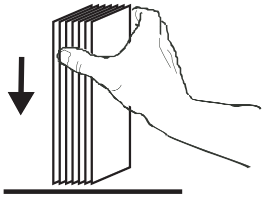
**Step 2.** Remove all wrapping from the card deck.

---

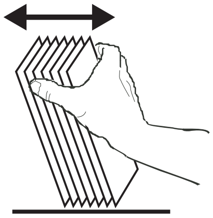
**Caution** • Do not touch print surfaces of the cards; this can reduce print quality.

---

**Step 3.** Holding the card deck by the sides, hold it vertically against a flat surface such as a desktop. If the deck is too thick for your hand to hold it comfortably, use about half a deck at a time.



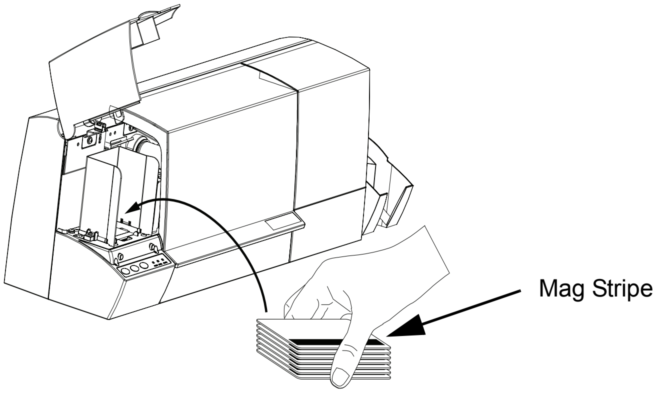
**Step 4.** Push the stack back and forth to an angle of about 45° from vertical, so as to separate all of the cards.



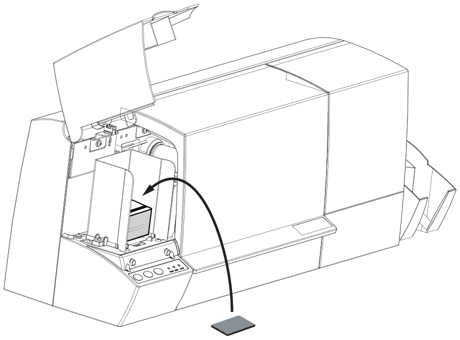
**Important** • Static charges and edge burrs from the card die-cutting process can render individual cards stuck together with significant adhesion force. These cards must be physically separated from each other before inserting into the Card Feeder; if not separated, feeding or printing problems may occur.

**Step 5.** Restore the card stack to its original squared-off condition, and place the cards in the input hopper. The input hopper can hold up to 150 cards.

**Note** • Cards with a Magnetic Stripe should be loaded with the stripe up and toward the front of the printer, as shown in the figure below.



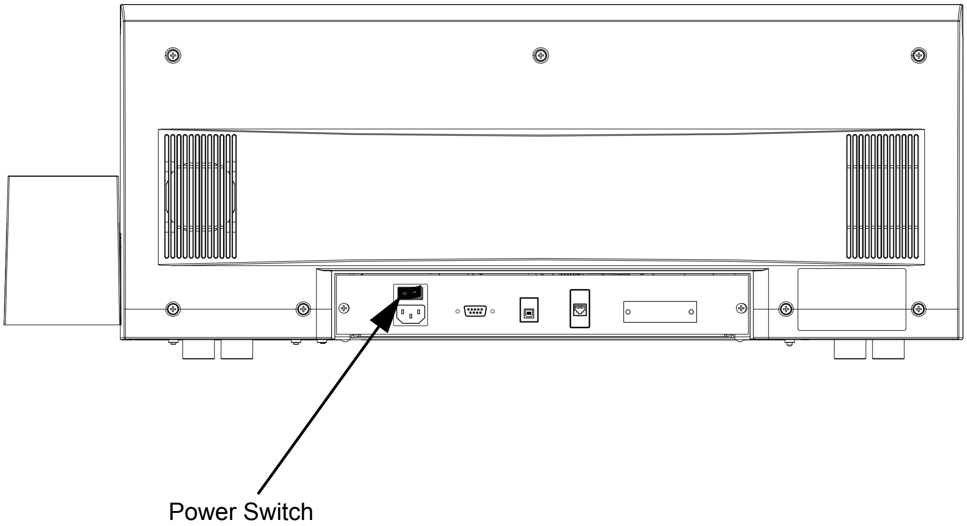
**Step 6.** Place the Card Weight on top of the card stack.



**Step 7.** Close the Card Feeder Cover.

## 2.4 Connecting Power

The AC Power is connected and turned on so that in the next procedure, *Ribbon Installation*, when the printer's main cover is opened the Print Head will raise automatically.



**Step 1.** Verify that the printer's Power Switch is set to OFF (**O**).

**Step 2.** Select the proper power cord for the local ac power source from the accessories that are shipped with the printer.

---

**Caution** • If you do not have the proper power cord for your local power source, or if the power cord appears frayed or damaged in any way, or if the power cord will not securely plug into the printer's power connection or the source outlet, **STOP!** Use of a damaged or incorrect power cord could cause equipment damage, result in an electrical fire, or possibly cause injury.

---

**Step 3.** Plug the power cord into the printer's power connection and a grounded AC power source connection.

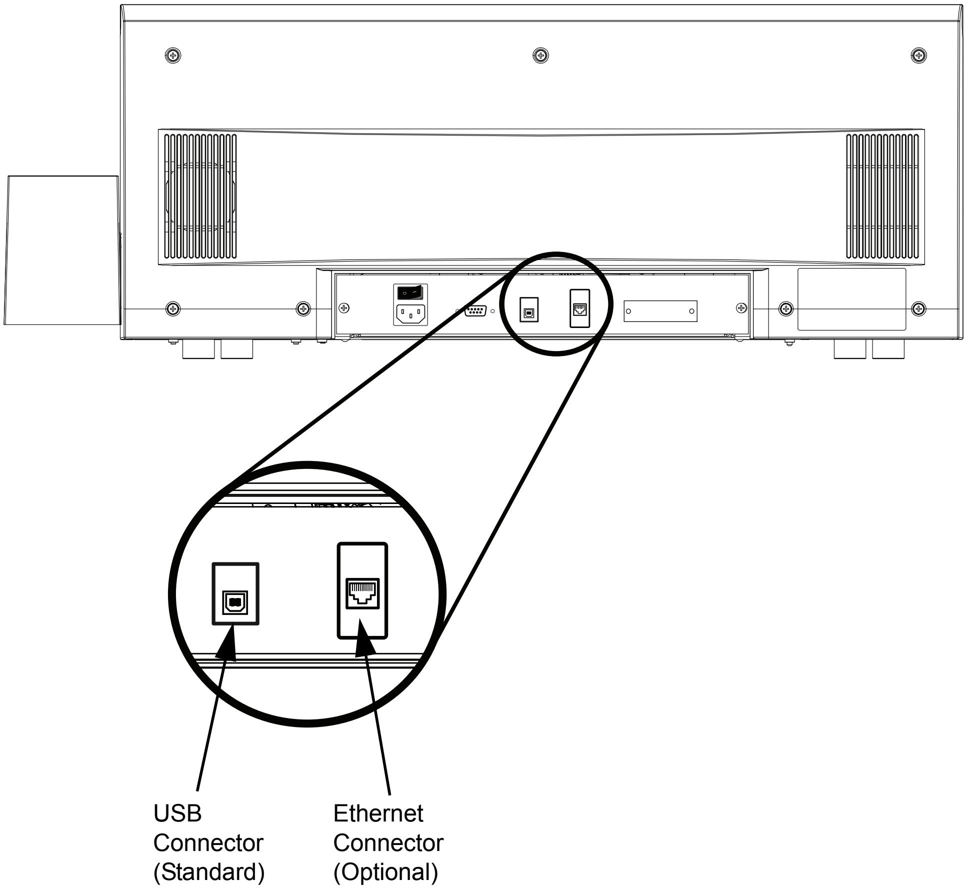
**Step 4.** Turn the printer on by setting the Power Switch to ON (**I**).

## 2.5 Connecting the Printer to your Computer

The P630*i* and P640*i* Printers have a USB interface as standard.

As options (must be specified at time of order), the printer can additionally have a 10/100T Ethernet port for connection to an Ethernet Network.

Only one interface at a time will be connected.


USB
Connector
(Standard)
Ethernet
Connector
(Optional)

## 2.6 Installing the Printer Driver

Each computer that will use the P630*i* or P640*i* Printer must have the Printer Driver installed. A common Printer Driver serves both P630*i* and P640*i* Printers.

To install the Printer Driver, insert the **User Documentation, Drivers, and Training CD**, included with your printer, into the host computer and the InstallShield Wizard will walk you through the required installation steps. The InstallShield Wizard will:

- Automatically install the User Interface when the driver CD is inserted. (Autorun must be enabled for your CD)

  If Autorun is disabled:

  **a.** Insert the Driver CD into the CD-ROM drive.

  **b.** Select *Start* > *Run.*

  **c.** Enter the letter that indicates the CD-ROM drive followed by a colon, a backslash, and *setup*. For example: *d:\setup*

- Start the installation process when the **Install Printer Driver** menu item is selected from the Main Menu.
- Allow you to install either a local printer and driver or a networked printer and driver.
- Detect previous versions of the driver and clean up any unnecessary Windows registry entries. You must select **Uninstall Printers and Drivers** in the Printer Setup window to remove any previous driver versions, reboot, and then restart the install process again.
- Install the new driver files.
- Reboot your computer.

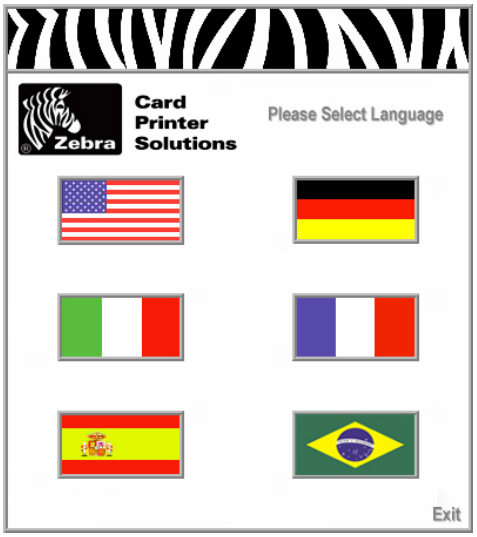
## 2.6.1 Installing the USB Printer Driver

**Note** • To install the Ethernet driver, see Section 2.6.2.

**Step 1.** Connect the printer power (see Section 2.4), and connect the USB port on the rear of the printer to the computer's USB port (see Section 2.5). Turn the Printer on, and let it initialize until the READY LED on the front panel is lit.

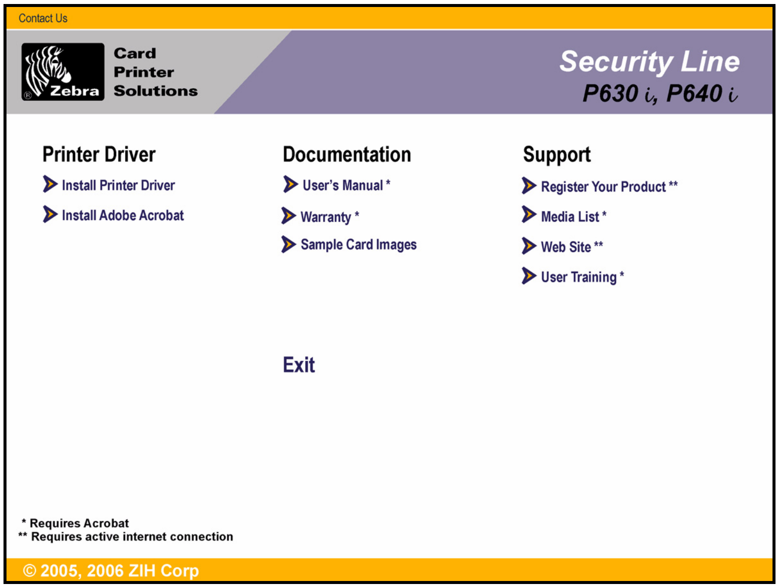
**Step 2.** The Windows "Found New Hardware" screen will appear. Click "Cancel".

**Step 3.** Insert the **User Documentation, Drivers, and Training CD** into the CD drive of the host computer. The **Select Language** window will open.

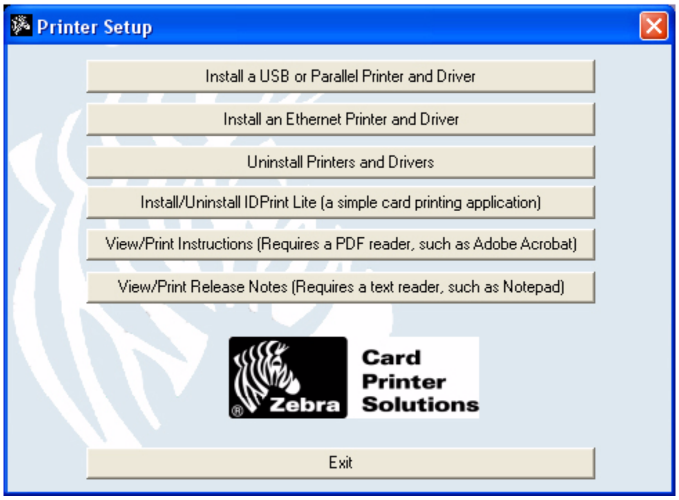


**Step 4.** From the **Select Language** window, choose the appropriate language for your system.

**Step 5.** The **Main Menu** will open in the selected language (English shown below).


Contact Us
Card
Printer
Solutions
Zebra
Security Line
P630 i, P640 i
Printer Driver
Install Printer Driver
Install Adobe Acrobat
Documentation
User's Manual *
Warranty *
Sample Card Images
Support
Register Your Product **
Media List *
Web Site **
User Training *
Exit
* Requires Acrobat
** Requires active internet connection
© 2005, 2006 ZIH Corp

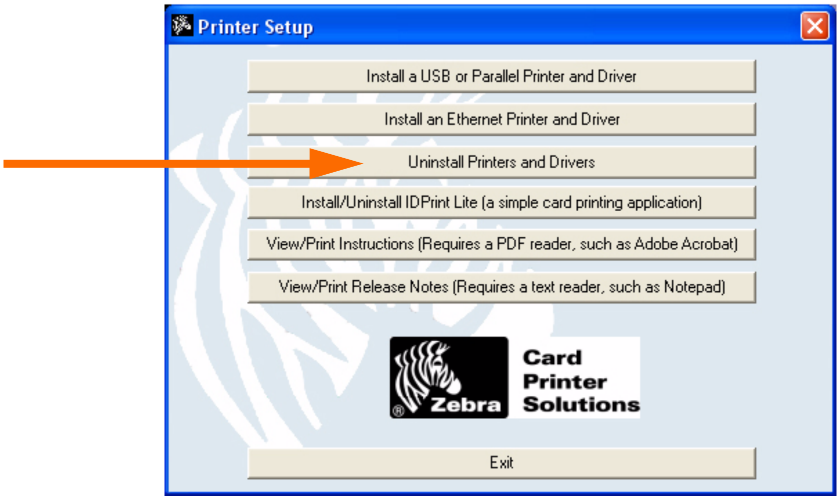
**Step 6.** From the **Main Menu**, click **Install Printer Driver**. The **Printer Setup** window will open.


Printer Setup
Install a USB or Parallel Printer and Driver
Install an Ethernet Printer and Driver
Uninstall Printers and Drivers
Install/Uninstall IDPrint Lite (a simple card printing application)
View/Print Instructions (Requires a PDF reader, such as Adobe Acrobat)
View/Print Release Notes (Requires a text reader, such as Notepad)
Card
Printer
Solutions
Zebra
Exit

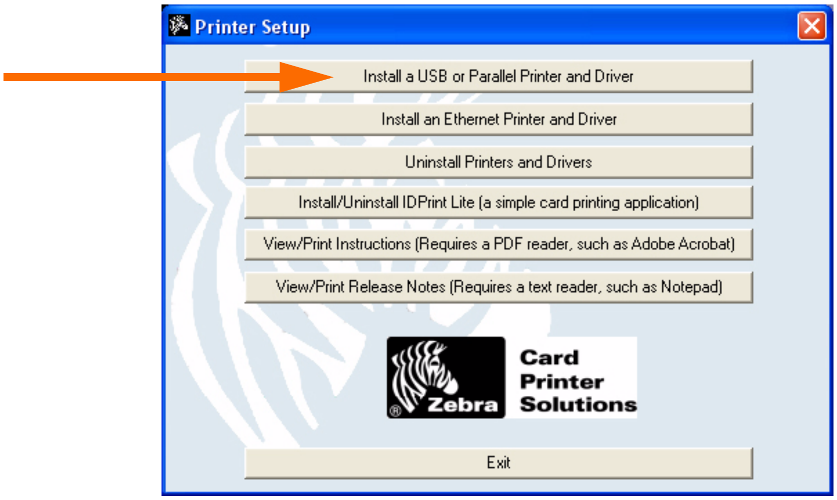
**Step 7.** If an older P630*i* or P640*i* Printer and Driver is installed on your computer, click on **Uninstall Printers and Drivers** to remove it.

Follow the screen prompts. At the end of the uninstall process you will be asked to re-boot your computer. Before re-booting, exit from the Driver Installation program and remove the CD. Then re-boot your computer, and start over with Step 1.

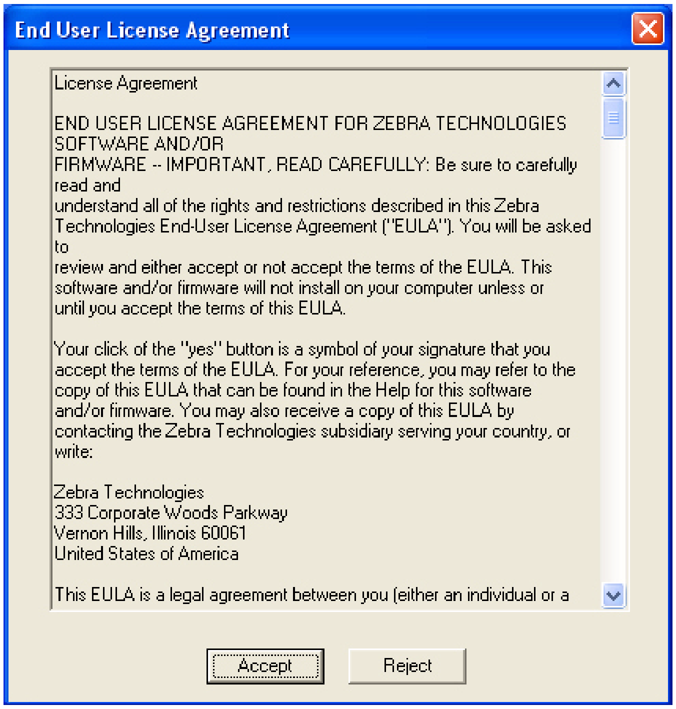
If the computer enters the Found New Hardware Wizard at this time, cancel this wizard.


Printer Setup
Install a USB or Parallel Printer and Driver
Install an Ethernet Printer and Driver
Uninstall Printers and Drivers
Install/Uninstall IDPrint Lite (a simple card printing application)
View/Print Instructions (Requires a PDF reader, such as Adobe Acrobat)
View/Print Release Notes (Requires a text reader, such as Notepad)
Zebra
Card Printer Solutions
Exit

**Step 8.** Click on **Install a USB or Parallel Printer and Driver**.


Printer Setup
Install a USB or Parallel Printer and Driver
Install an Ethernet Printer and Driver
Uninstall Printers and Drivers
Install/Uninstall IDPrint Lite (a simple card printing application)
View/Print Instructions (Requires a PDF reader, such as Adobe Acrobat)
View/Print Release Notes (Requires a text reader, such as Notepad)
Zebra
Card Printer Solutions
Exit

**Step 9.** This will bring up the End User License Agreement. To proceed with the installation, click **Accept**.


End User License Agreement
Accept
Reject

License Agreement

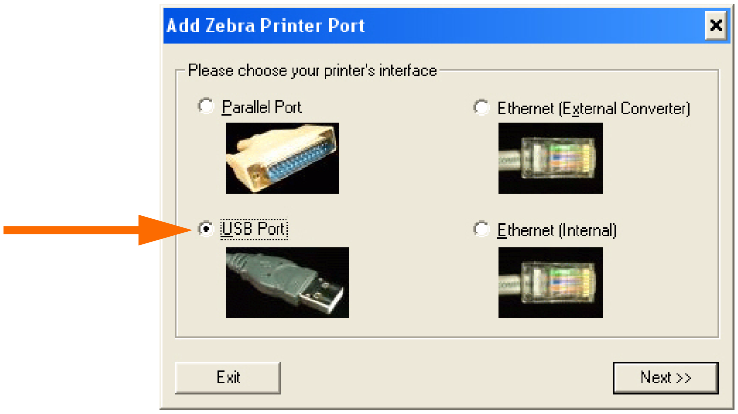
END USER LICENSE AGREEMENT FOR ZEBRA TECHNOLOGIES SOFTWARE AND/OR FIRMWARE -- IMPORTANT, READ CAREFULLY: Be sure to carefully read and understand all of the rights and restrictions described in this Zebra Technologies End-User License Agreement ("EULA"). You will be asked to review and either accept or not accept the terms of the EULA. This software and/or firmware will not install on your computer unless or until you accept the terms of this EULA.

Your click of the "yes" button is a symbol of your signature that you accept the terms of the EULA. For your reference, you may refer to the copy of this EULA that can be found in the Help for this software and/or firmware. You may also receive a copy of this EULA by contacting the Zebra Technologies subsidiary serving your country, or write:

Zebra Technologies
333 Corporate Woods Parkway
Vernon Hills, Illinois 60061
United States of America

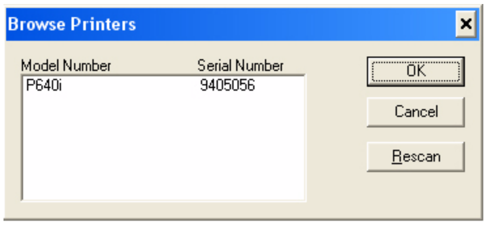
This EULA is a legal agreement between you (either an individual or a

**Step 10.** This will bring up the **Add Zebra Printer Port** window. Select the **USB Port**, and then click **Next >**.


Add Zebra Printer Port
Please choose your printer's interface
○ Parallel Port
○ Ethernet (External Converter)
● USB Port
○ Ethernet (Internal)
Exit
Next >>

**Step 11.** This brings up the Browse Printers window, shown below. If your P640*i* / P630*i* Printer is listed, select (highlight) it and click **OK**.

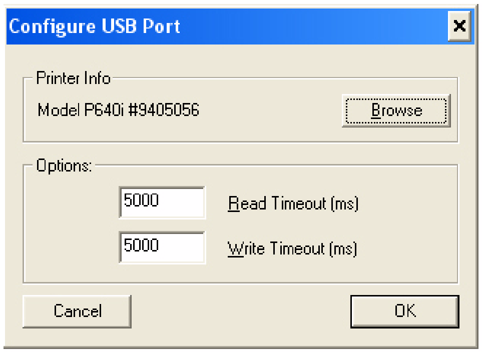
If your printer is not listed, make sure the printer is powered on and check the USB cable connections; then click **Rescan**. When it appears, select (highlight) it and click **OK**.


Browse Printers

| Model Number | Serial Number |
|---|---|
| P640i | 9405056 |

**Step 12.** This brings up the Configure USB Port window. If your printer is not listed in the Printer info area, click **Browse**.

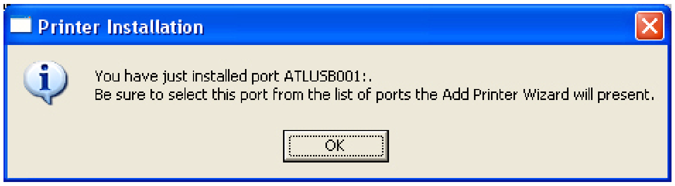
Leave the two timeout values alone. Click **OK**.


Configure USB Port

Printer Info
Model P640i #9405056

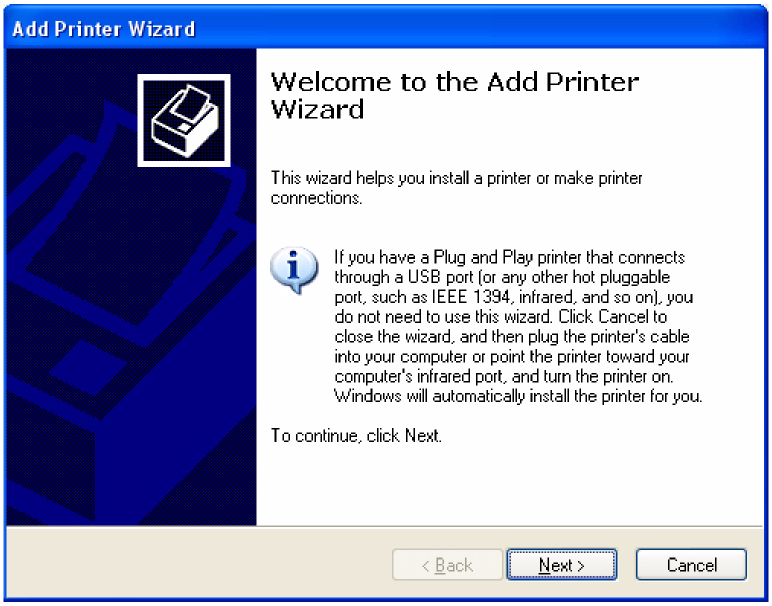
Options:
5000 Read Timeout (ms)
5000 Write Timeout (ms)

**Step 13.** This will bring up the Printer Installation window. Note the value shown on the first line (ATLUSB001 for the screen shown here), then click **OK**.


Printer Installation

You have just installed port ATLUSB001:.
Be sure to select this port from the list of ports the Add Printer Wizard will present.

**Step 14.** This opens the Add Printer Wizard welcome window. Click **Next >**.



Welcome to the Add Printer Wizard

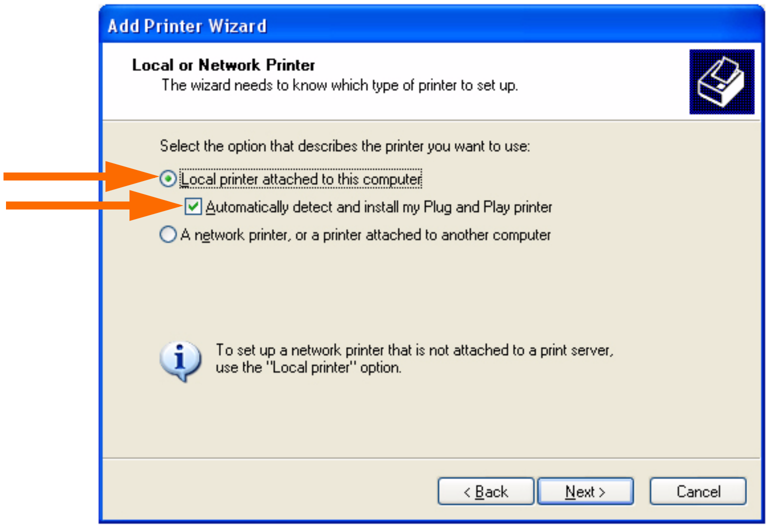
This wizard helps you install a printer or make printer connections.

If you have a Plug and Play printer that connects througha a USB port (or any other hot pluggable port, such as IEEE 1394, infrared, and so on), you do not need to use this wizard. Click Cancel to close the wizard, and then plug the printer's cable into your computer or point the printer toward your computer's infrared port, and turn the printer on. Windows will automatically install the printer for you.

To continue, click Next.

**Step 15.** This brings up the Add Printer Wizard Local or Network Printer window. For a standard USB installation, select **Local Printer attached to this computer** and check the box to detect a Plug and Play printer.

Then click **Next >**.



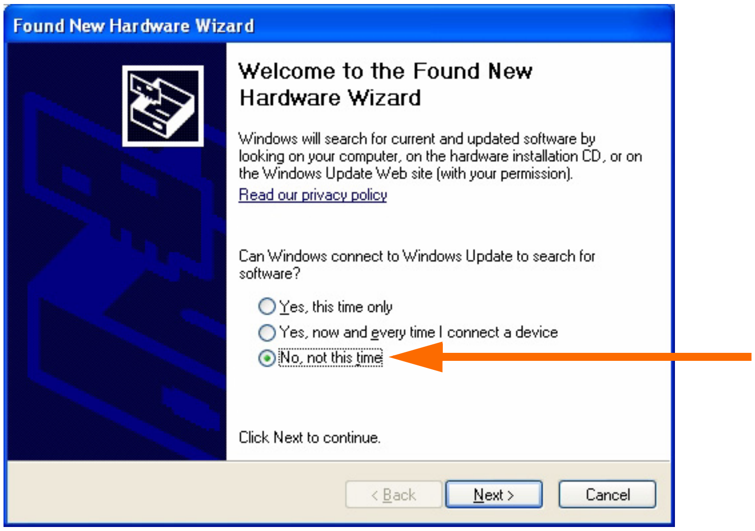
**Local or Network Printer**
The wizard needs to know which type of printer to set up.

Select the option that describes the printer you want to use:

● Local printer attached to this computer
☑ Automatically detect and install my Plug and Play printer
○ A network printer, or a printer attached to another computer

To set up a network printer that is not attached to a print server, use the "Local printer" option.

**Step 16.** This brings up the Found New Hardware Wizard welcome window. In general, select **Yes, this time only** and then click **Next >**.



Found New Hardware Wizard

Welcome to the Found New Hardware Wizard

Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).

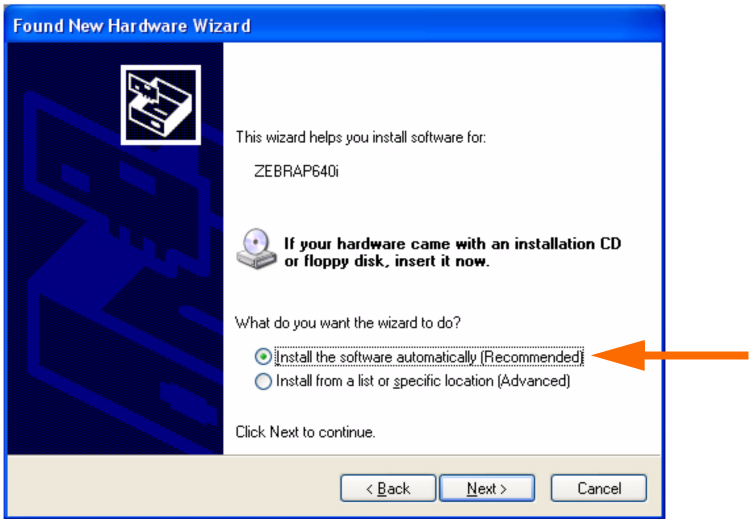
Read our privacy policy

Can Windows connect to Windows Update to search for software?

○ Yes, this time only
○ Yes, now and every time I connect a device
● No, not this time

Click Next to continue.

**Step 17.** The next window helps install the software driver. Select **Install the software automatically (Recommended)** and then click **Next >**.



Found New Hardware Wizard

This wizard helps you install software for:

ZEBRAP640i

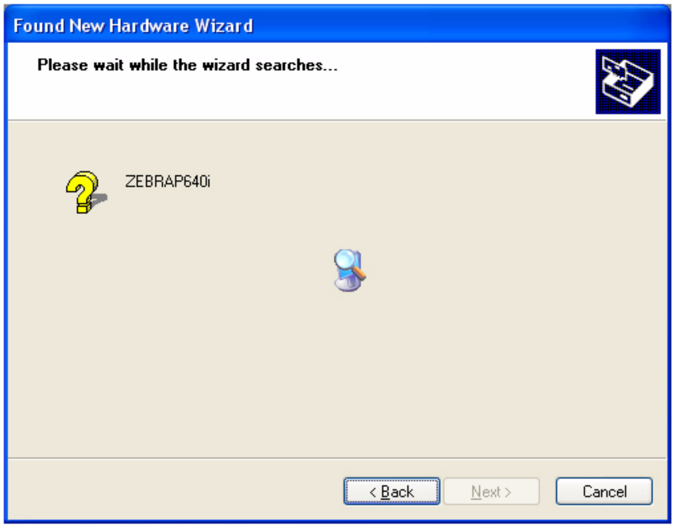
**If your hardware came with an installation CD or floppy disk, insert it now.**

What do you want the wizard to do?

● Install the software automatically (Recommended)
○ Install from a list or specific location (Advanced)

Click Next to continue.

**Step 18.** The Wizard will search for the Printer. The screen that appears while searching appears on the next page.

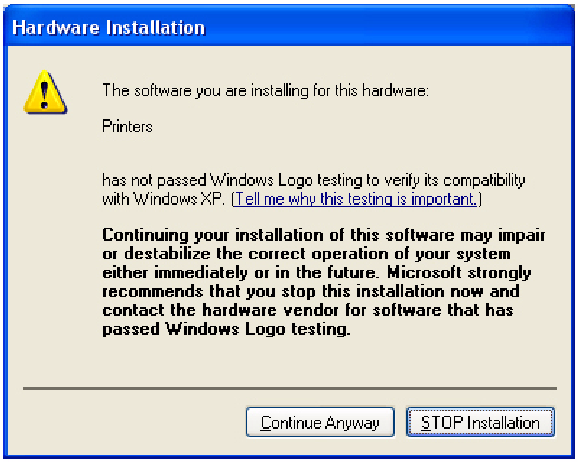


Found New Hardware Wizard

Please wait while the wizard searches...

ZEBRAP640i

**Step 19.** When the Wizard finds the Printer, it may display a window referring to compatibility, as shown below. If so, click **Continue Anyway.**



Hardware Installation

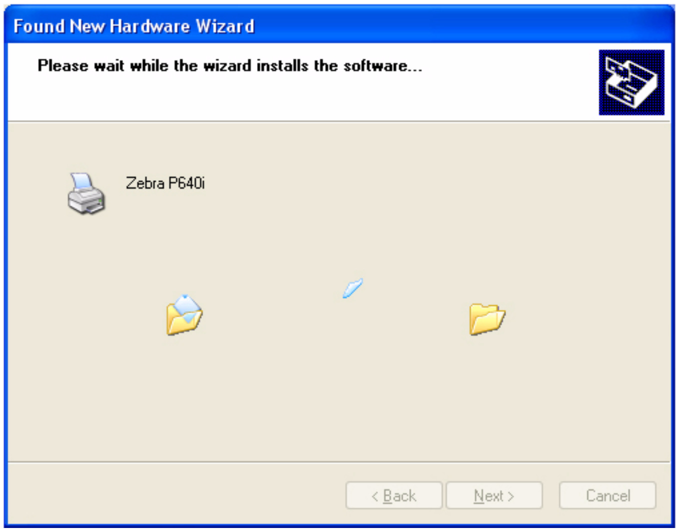
The software you are installing for this hardware:

Printers

has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)

**Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.**

**Step 20.** Wait while the Wizard installs the software.

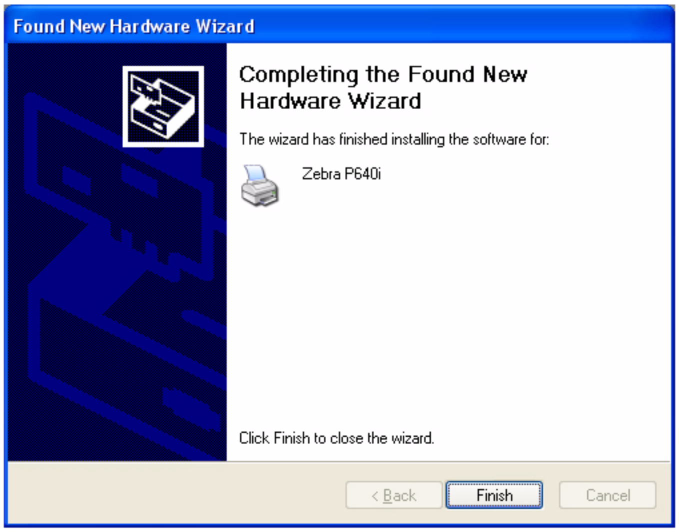


Found New Hardware Wizard

**Please wait while the wizard installs the software...**

Zebra P640i

**Step 21.** When software installation is complete, the following window will display. Click **Finish**.



Found New Hardware Wizard

Completing the Found New Hardware Wizard

The wizard has finished installing the software for:

Zebra P640i

Click Finish to close the wizard.

**Step 22.** This completes software driver installation. To use the P630i or P640i Printer, you would select it just like you would any other printer connected to a Windows system.

## 2.6.2 Installing the Ethernet Printer Driver

**Note** • To install the USB driver, see Section 2.6.1.

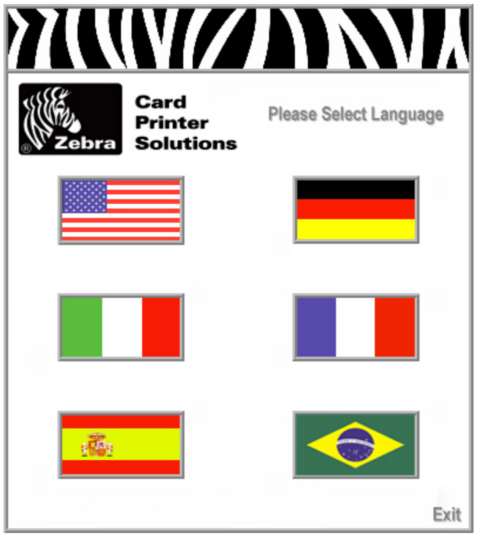
**Important** • The Ethernet Network must be configured correctly, with the Printer and the host computer on the same subnet mask. If you are not sure how to verify this or change the configuration, consult someone knowledgeable on Ethernet Networks.

**Important** • A valid **static** IP address must be assigned to the printer.

**Important** • See Section 4.9 for system-related troubleshooting issues.

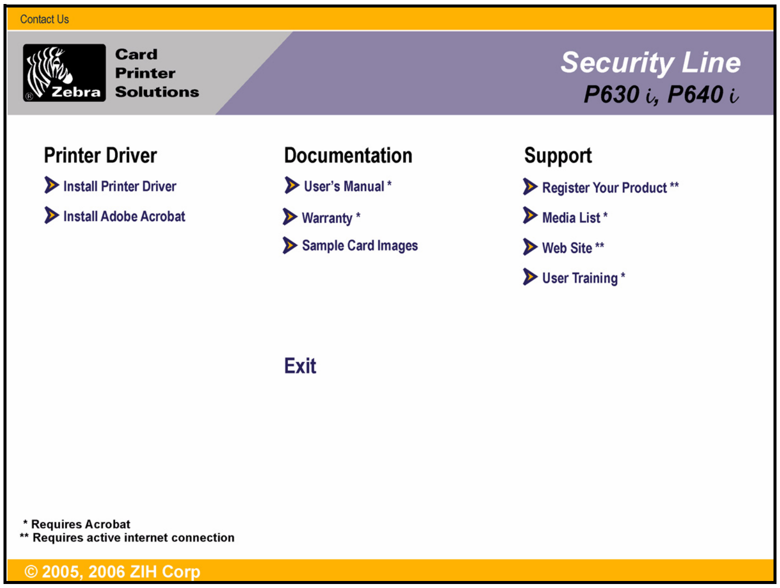
**Step 1.** Connect the printer power (see Section 2.4), and connect the Ethernet Port on the rear of the printer to an Ethernet Network Port (see Section 2.5). Turn the Printer on, and let it initialize until the READY LED on the front panel is lit.

**Step 2.** Insert the **User Documentation, Drivers, and Training CD** into the CD drive of the host computer. The **Select Language** window will open.

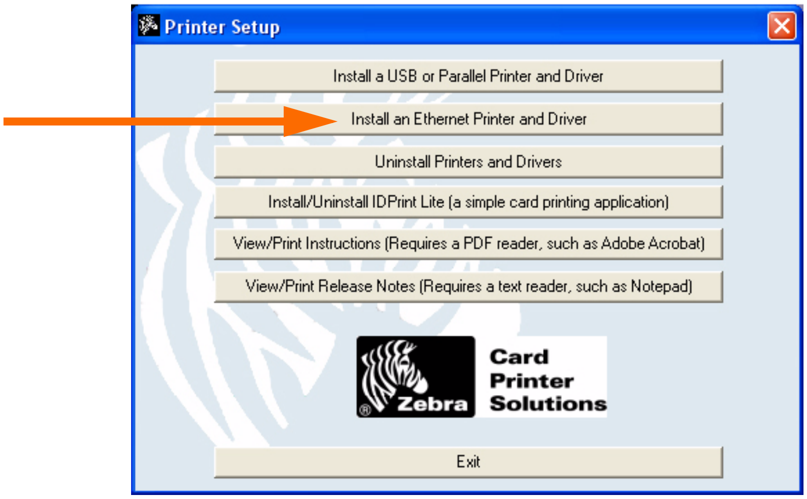


**Step 3.** From the **Select Language** window, click on the appropriate language for your system.

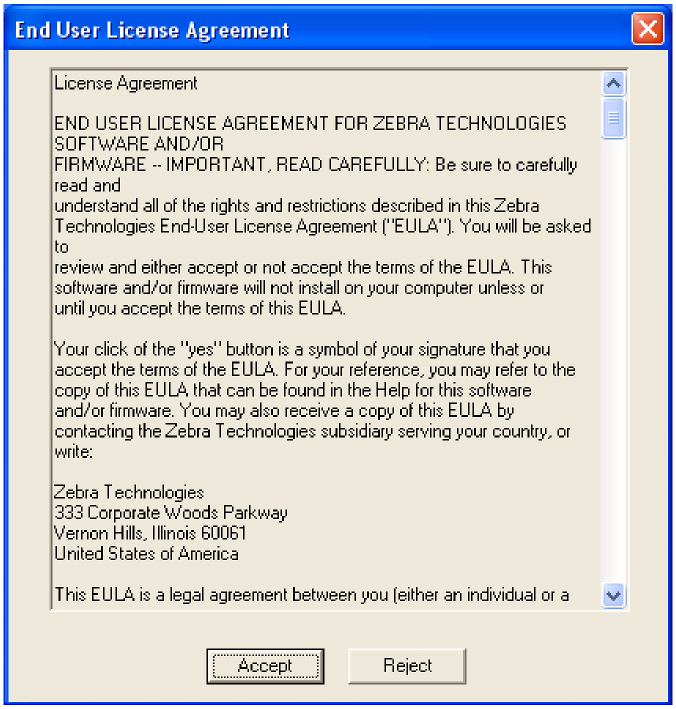
**Step 4.** The **Main Menu** will open in the selected language (English shown below).


Contact Us
Card Printer Solutions
Zebra
Security Line
P630 i, P640 i
Printer Driver
Install Printer Driver
Install Adobe Acrobat
Documentation
User's Manual *
Warranty *
Sample Card Images
Support
Register Your Product **
Media List *
Web Site **
User Training *
Exit
* Requires Acrobat
** Requires active internet connection
© 2005, 2006 ZIH Corp

**Step 5.** From the **Main Menu**, click **Install Printer Driver**. The **Printer Setup** window will open. Click **Install an Ethernet Printer and Driver**.


Printer Setup
Install a USB or Parallel Printer and Driver
Install an Ethernet Printer and Driver
Uninstall Printers and Drivers
Install/Uninstall IDPrint Lite (a simple card printing application)
View/Print Instructions (Requires a PDF reader, such as Adobe Acrobat)
View/Print Release Notes (Requires a text reader, such as Notepad)
Zebra
Card Printer Solutions
Exit

**Step 6.** This will bring up the End User License Agreement. To proceed with the installation, click **Accept**.



License Agreement

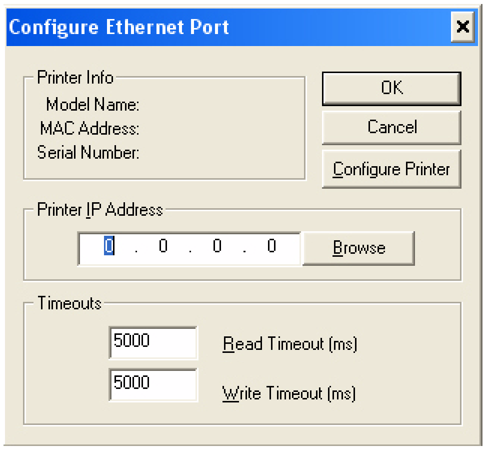
END USER LICENSE AGREEMENT FOR ZEBRA TECHNOLOGIES
SOFTWARE AND/OR
FIRMWARE -- IMPORTANT, READ CAREFULLY: Be sure to carefully
read and
understand all of the rights and restrictions described in this Zebra
Technologies End-User License Agreement ("EULA"). You will be asked
to
review and either accept or not accept the terms of the EULA. This
software and/or firmware will not install on your computer unless or
until you accept the terms of this EULA.

Your click of the "yes" button is a symbol of your signature that you
accept the terms of the EULA. For your reference, you may refer to the
copy of this EULA that can be found in the Help for this software
and/or firmware. You may also receive a copy of this EULA by
contacting the Zebra Technologies subsidiary serving your country, or
write:

Zebra Technologies
333 Corporate Woods Parkway
Vernon Hills, Illinois 60061
United States of America

This EULA is a legal agreement between you (either an individual or a

**Step 7.** This brings up the **Configure Ethernet Port** screen. Click the **Browse** button.



Printer Info
Model Name:
MAC Address:
Serial Number:

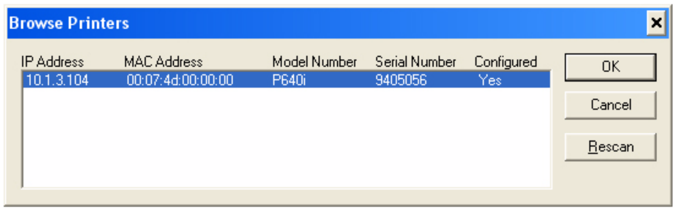
Printer IP Address
0 . 0 . 0 . 0

Timeouts
5000 Read Timeout (ms)
5000 Write Timeout (ms)

**Step 8.** Any Zebra printers will be located. Select (highlight) the desired printer (for this procedure it is a P640*i*, but the steps would be the same for a P630*i*) and click the **OK** button.

**Note •** If the Printer is not found, check to make sure the Printer is powered on and the Ethernet connector is engaged.

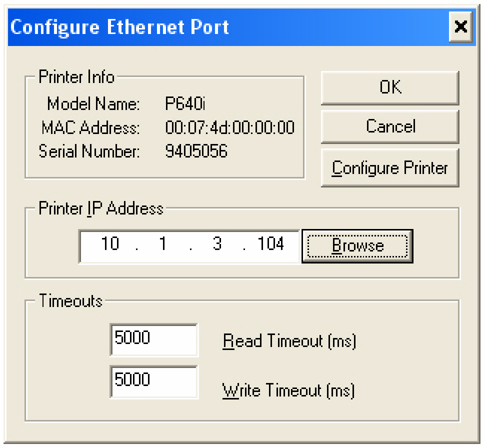
Also, the Ethernet Network must be configured correctly, with the Printer and the host computer on the same subnet mask. If you are not sure how to verify this or change the configuration, consult someone knowledgeable on Ethernet Networks.



Browse Printers

| IP Address | MAC Address | Model Number | Serial Number | Configured |
|---|---|---|---|---|
| 10.1.3.104 | 00:07:4d:00:00:00 | P640i | 9405056 | Yes |

**Step 9.** The Configure Ethernet Port screen will reappear, but now the information for the P640*i* printer selected in Step 8 will be displayed. Then click **OK**.



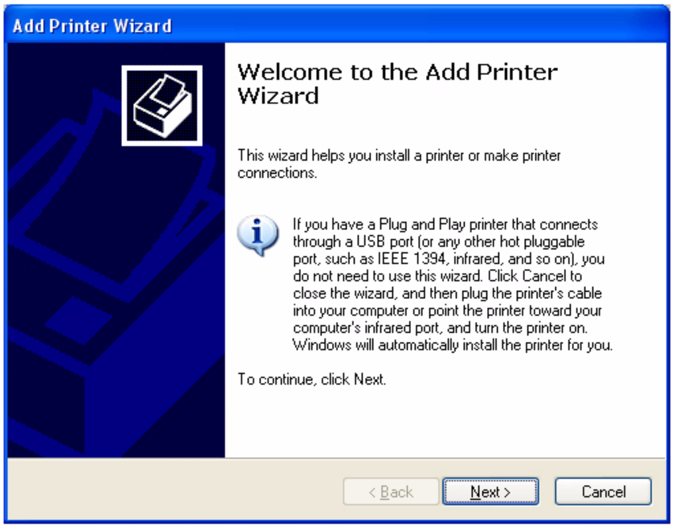
Configure Ethernet Port

Printer Info
Model Name: P640i
MAC Address: 00:07:4d:00:00:00
Serial Number: 9405056

Printer IP Address: 10 . 1 . 3 . 104

Timeouts
Read Timeout (ms): 5000
Write Timeout (ms): 5000

**Step 10.** This brings up the Add Printer Wizard. Click **Next >**.



Add Printer Wizard

Welcome to the Add Printer Wizard

This wizard helps you install a printer or make printer connections.

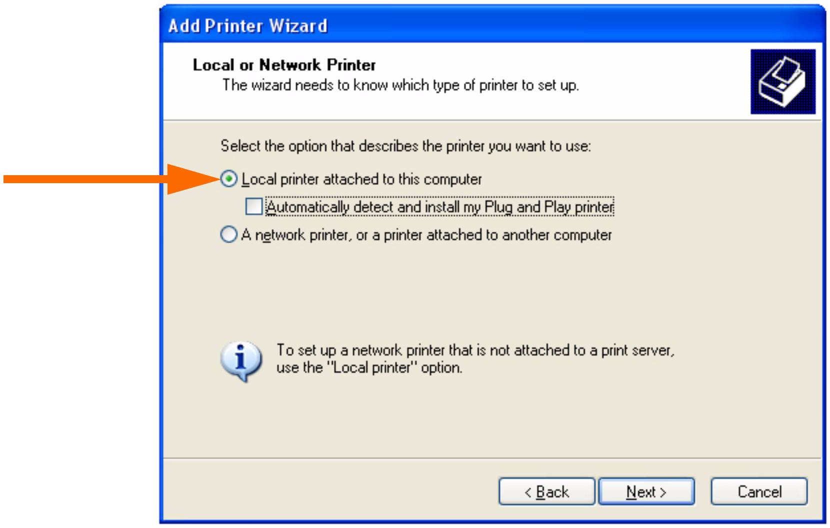
If you have a Plug and Play printer that connects through a USB port (or any other hot pluggable port, such as IEEE 1394, infrared, and so on), you do not need to use this wizard. Click Cancel to close the wizard, and then plug the printer's cable into your computer or point the printer toward your computer's infrared port, and turn the printer on. Windows will automatically install the printer for you.

To continue, click Next.

**Step 11.** The next screen lets you specify the type of printer to set up. Select “Local printer attached to the computer.”

“Automatically detect and install my Plug and Play printer” should be **un-checked**.

Then click **Next >**.



Add Printer Wizard

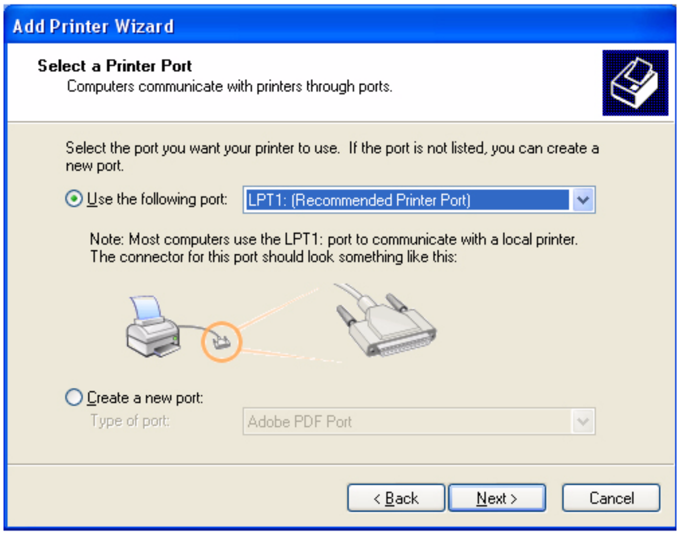
**Local or Network Printer**
The wizard needs to know which type of printer to set up.

Select the option that describes the printer you want to use:

● Local printer attached to this computer
☐ Automatically detect and install my Plug and Play printer
○ A network printer, or a printer attached to another computer

To set up a network printer that is not attached to a print server, use the "Local printer" option.

**Step 12.** The Add Printer Wizard / Select a Printer Port screen will now appear.



**Select a Printer Port**
Computers communicate with printers through ports.

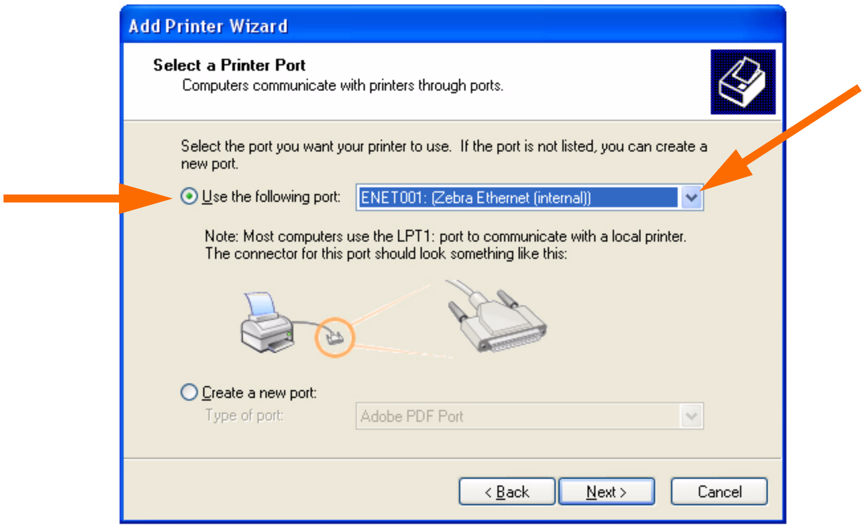
Select the port you want your printer to use. If the port is not listed, you can create a new port.

● Use the following port: LPT1: (Recommended Printer Port)

Note: Most computers use the LPT1: port to communicate with a local printer. The connector for this port should look something like this:

○ Create a new port:
Type of port: Adobe PDF Port

**Step 13.** Click on “Use the following port”; scroll to “ENETxxx (Zebra Ethernet (internal))” where “xxx” is the number of the port - any Zebra Ethernet port number can be used.



**Select a Printer Port**
Computers communicate with printers through ports.

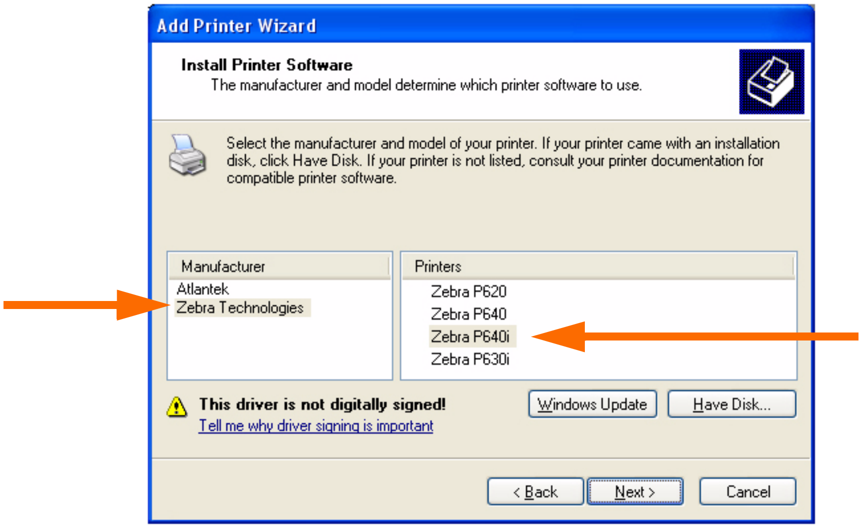
Select the port you want your printer to use. If the port is not listed, you can create a new port.

● Use the following port: ENET001: (Zebra Ethernet (internal))

Note: Most computers use the LPT1: port to communicate with a local printer. The connector for this port should look something like this:

○ Create a new port:
Type of port: Adobe PDF Port

**Step 14.** Check that the printer is turned on (and the READY LED is lit), then click **Next >.** This will bring up the “Add Printer Software Wizard” screen.


Add Printer Wizard
Manufacturer
Atlantek
Zebra Technologies
Printers
Zebra P620
Zebra P640
Zebra P640i
Zebra P630i
Windows Update
Have Disk...
< Back
Next >
Cancel

**Install Printer Software**

The manufacturer and model determine which printer software to use.

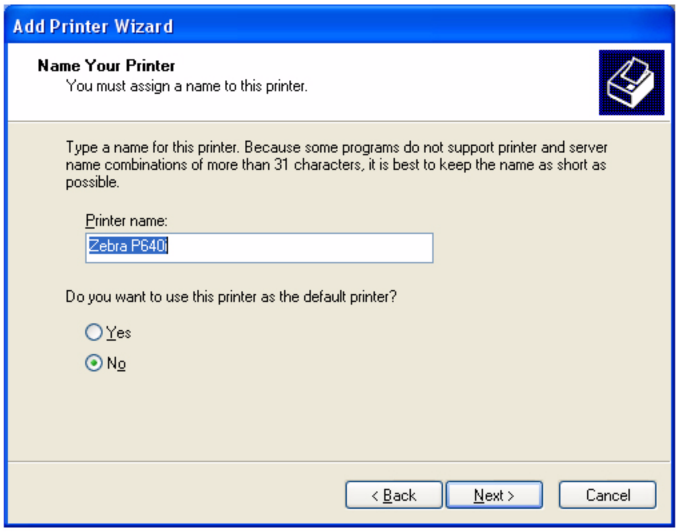
Select the manufacturer and model of your printer. If your printer came with an installation disk, click Have Disk. If your printer is not listed, consult your printer documentation for compatible printer software.

**This driver is not digitally signed!**

Tell me why driver signing is important

**Step 15.** Select the Manufacturer (Zebra Technologies) and the printer model number; then click **Next >**.

**Step 16.** This brings up the “Name Your Printer” screen.


Add Printer Wizard
< Back
Next >
Cancel

**Name Your Printer**

You must assign a name to this printer.

Type a name for this printer. Because some programs do not support printer and server name combinations of more than 31 characters, it is best to keep the name as short as possible.

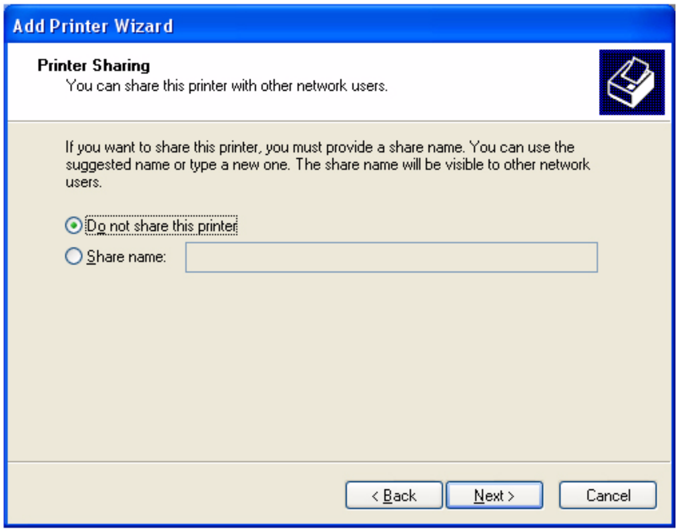
Printer name: Zebra P640i

Do you want to use this printer as the default printer?

○ Yes
● No

**Step 17.** Verify that the printer name is correct. Specify if you want to use this printer as your default printer (this can always be changed in the Windows Printers or Printers and FAXes control panel). Then click **Next >**.

**Step 18.** Specify whether or not you want to allow printer sharing, then click **Next >**.



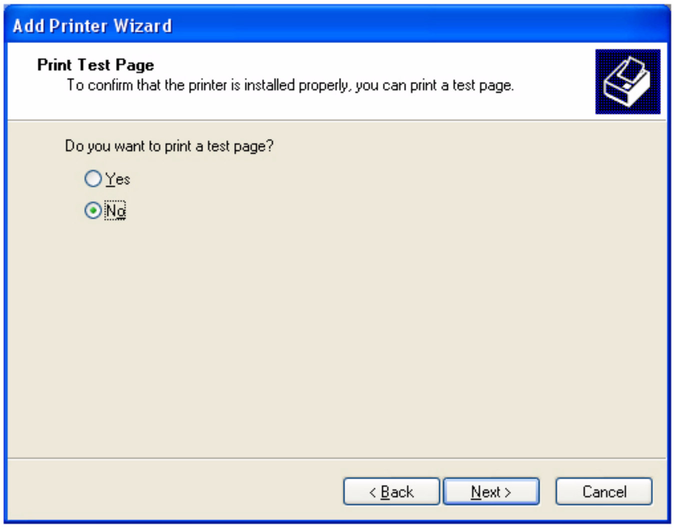
Add Printer Wizard

**Printer Sharing**
You can share this printer with other network users.

If you want to share this printer, you must provide a share name. You can use the suggested name or type a new one. The share name will be visible to other network users.

● Do not share this printer
○ Share name:

**Step 19.** Specify if you wish to print a test page (note that card printers consider each card to be a page); then click **Next >**.



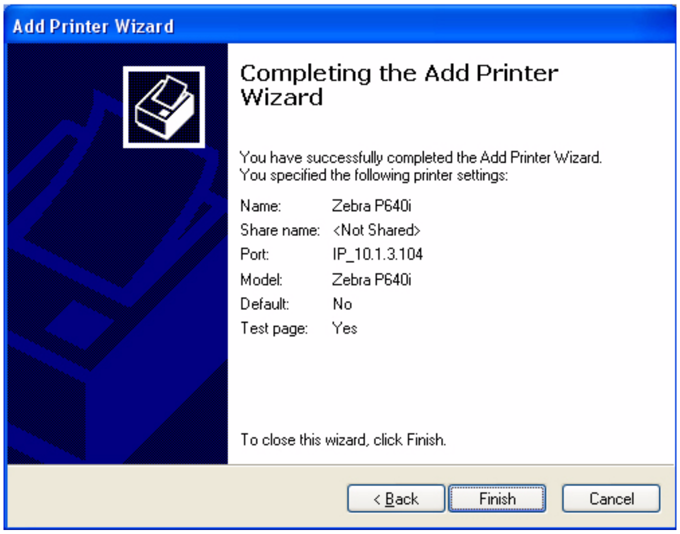
Add Printer Wizard

**Print Test Page**
To confirm that the printer is installed properly, you can print a test page.

Do you want to print a test page?

○ Yes
● No

**Step 20.** Click **Finish**.



Add Printer Wizard

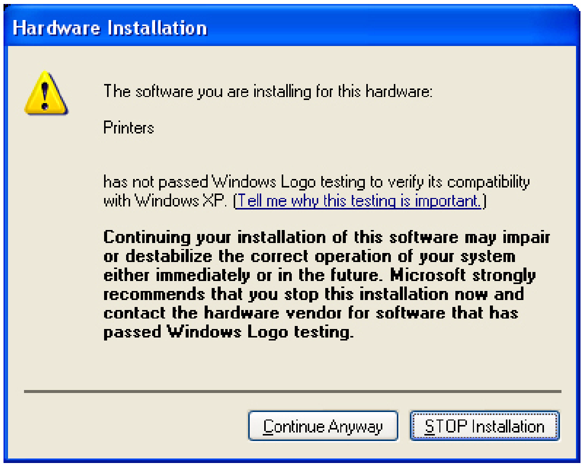
Completing the Add Printer Wizard

You have successfully completed the Add Printer Wizard.
You specified the following printer settings:

| | |
|---|---|
| Name: | Zebra P640i |
| Share name: | <Not Shared> |
| Port: | IP_10.1.3.104 |
| Model: | Zebra P640i |
| Default: | No |
| Test page: | Yes |

To close this wizard, click Finish.

**Step 21.** The following screen will appear.



Hardware Installation

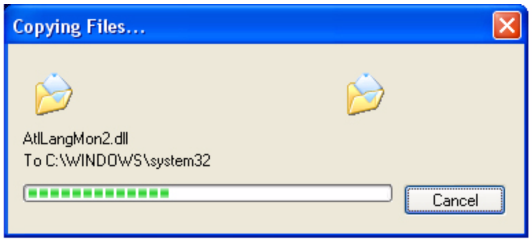
The software you are installing for this hardware:

Printers

has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)

**Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.**

**Step 22.** Click on **Continue Anyway**. You will see files being copied to the Windows folder.



Copying Files...

AtlLangMon2.dll
To C:\WINDOWS\system32

**Step 23.** When the file copying is complete, your printer is ready to use.

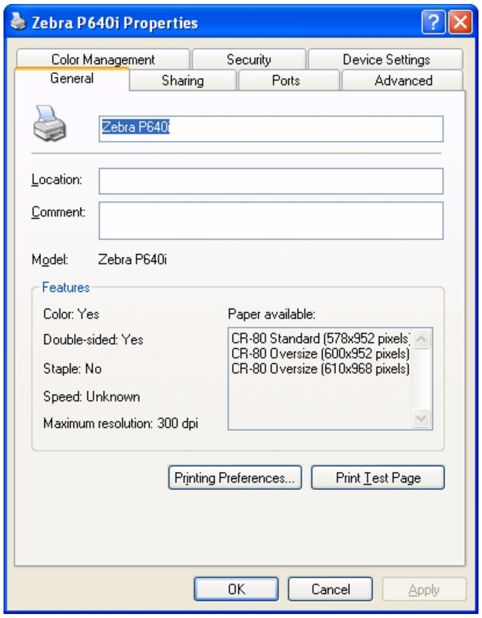
# 2.7 Changing the Printer Driver Options (Properties)

**Note •** The screen shots shown in this section are for the printer using the USB interface. If you are using the Ethernet interface, the screens will refer to the “Network Printer.”

You can change the default settings for the printer driver. Change the options as follows:

**Step 1.** From the Printers and Faxes list, right click the Card Printer; and select **Properties** from the pop-up menu.

**Step 2.** The **Printer Properties** window will open.



Zebra P640i Properties

Zebra P640i

Location:

Comment:

Model: Zebra P640i

Features

Color: Yes

Double-sided: Yes

Staple: No

Speed: Unknown

Maximum resolution: 300 dpi

Paper available:

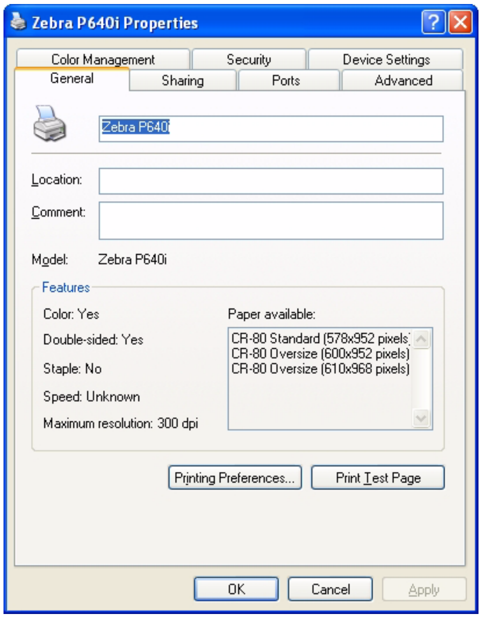
CR-80 Standard (578x952 pixels
CR-80 Oversize (600x952 pixels)
CR-80 Oversize (610x968 pixels)

- **General -** Displays printer name, tab selection for Printing Preferences and Print Test Page (i.e., the standard Windows test page).
- **Sharing -** OS feature where printer can be shared to other clients on a network.
- **Ports -** OS feature displays available communication ports.
- **Advanced -** OS feature to select printer availability and spooling options.
- **Color Management -** Allows user to define color profile(s) with color printers.
- **Security -** OS feature where permissions to printers can be defined.
- **Device Settings -** Allows user to make basic printer adjustments and access advanced printer controls.

## 2.7.1 General Tab

The General tab shows the printer model and lists the features of the printer.

To access the General tab, select *Start > Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties > General.*


Zebra P640i Properties
Color Management
Security
Device Settings
General
Sharing
Ports
Advanced
Features
Printing Preferences...
Print Test Page
OK
Cancel
Apply

Zebra P640i

Location:

Comment:

Model: Zebra P640i

Color: Yes

Double-sided: Yes

Staple: No

Speed: Unknown

Maximum resolution: 300 dpi

Paper available:
CR-80 Standard (578x952 pixels)
CR-80 Oversize (600x952 pixels)
CR-80 Oversize (610x968 pixels)

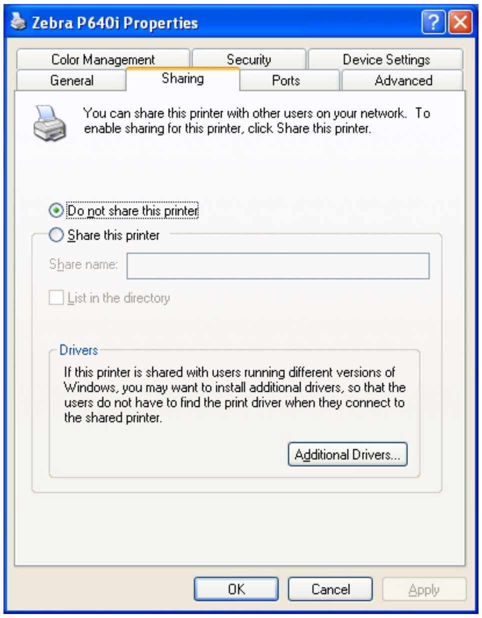
1. **Printing Preferences -** Changes the card settings; see Changing the Printing Preferences on page 77.

2. **Print Test Page -** Prints the standard Windows test page.

## 2.7.2 Sharing Tab

On the Sharing tab (Sharing Property Page), you can choose to share the printer over the network and install additional drivers to accommodate different operating systems.

To access the Sharing tab, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Sharing.*


Zebra P640i Properties
Color Management
Security
Device Settings
General
Sharing
Ports
Advanced
Drivers
Additional Drivers...
OK
Cancel
Apply

You can share this printer with other users on your network. To enable sharing for this printer, click Share this printer.

● Do not share this printer

○ Share this printer

Share name:

☐ List in the directory

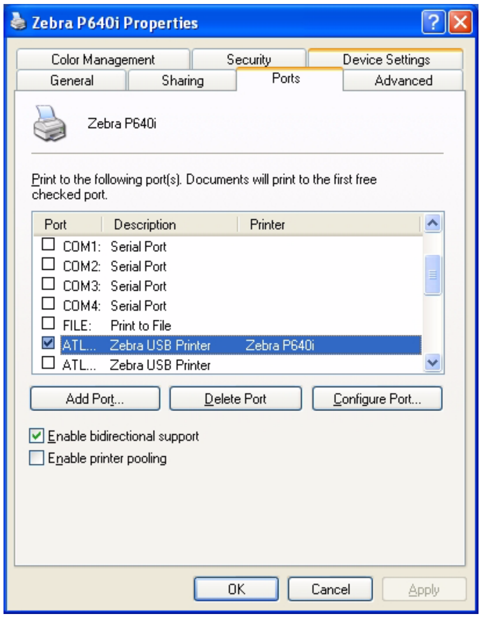
If this printer is shared with users running different versions of Windows, you may want to install additional drivers, so that the users do not have to find the print driver when they connect to the shared printer.

Share names can also be assigned. The Sharing Property Page is only displayed if the computer is set up on a network for sharing.

## 2.7.3 Ports Tab

Use the Ports tab to specify the computer port to which the P630*i* or P640*i* is connected. This will have been established at the initial installation of the printer, and will not normally require attention.

To access the Ports tab, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Ports.*



Print to the following port(s). Documents will print to the first free checked port.

| Port | Description | Printer |
|---|---|---|
| ☐ COM1: | Serial Port | |
| ☐ COM2: | Serial Port | |
| ☐ COM3: | Serial Port | |
| ☐ COM4: | Serial Port | |
| ☐ FILE: | Print to File | |
| ☑ ATL... | Zebra USB Printer | Zebra P640i |
| ☐ ATL... | Zebra USB Printer | |

☑ Enable bidirectional support
☐ Enable printer pooling

An exception to this is if you wish to use *printer pooling*, the ability to distribute print jobs to multiple printers. To enable printer pooling, check the “Enable Printer Pooling” box, then check multiple ports. Each port should have a single Zebra printer installed on it. All the pooled printers must be identical models with the same configuration (for example: all with YMC front, K back).

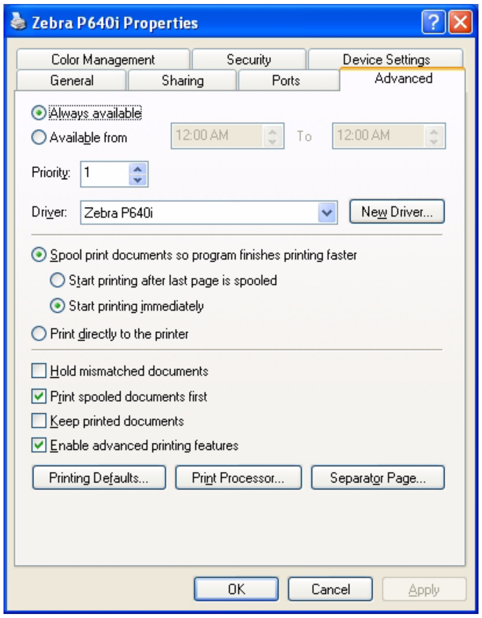
Now, when you print to the “main printer” (that is, whichever printer you right-clicked in Printers and Faxes to get to this screen), this printer will get print jobs until it has buffered as many jobs as it can take. Remaining jobs will then “spill over” to other printers until all printers in the pool are busy.

See Appendix F for details.

## 2.7.4 Advanced Tab

Determines the spooling (queuing) of print jobs, and how spooled jobs are handled relative to the most recent job. Printing Defaults allows the system administrator to establish selected default settings.

To access the Advanced tab, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Advanced.*


Zebra P640i Properties
Color Management
Security
Device Settings
General
Sharing
Ports
Advanced
New Driver...
Printing Defaults...
Print Processor...
Separator Page...
OK
Cancel
Apply

● Always available
○ Available from 12:00 AM To 12:00 AM
Priority: 1
Driver: Zebra P640i

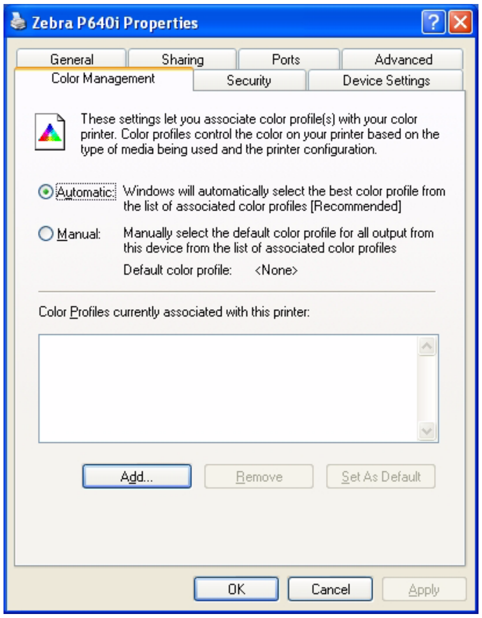
● Spool print documents so program finishes printing faster
  ○ Start printing after last page is spooled
  ● Start printing immediately
○ Print directly to the printer

☐ Hold mismatched documents
☑ Print spooled documents first
☐ Keep printed documents
☑ Enable advanced printing features

## 2.7.5 Color Management Tab

Color Management settings allow you to associate color profiles on the printer based on the type of media being used and printer configuration. The **Add** button allows the operator to add additional profiles to the color profile list.

To access the Color Management tab, select *Start > Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties > Color Management.*


Zebra P640i Properties
General
Sharing
Ports
Advanced
Color Management
Security
Device Settings
Add...
Remove
Set As Default
OK
Cancel
Apply

These settings let you associate color profile(s) with your color printer. Color profiles control the color on your printer based on the type of media being used and the printer configuration.

● Automatic: Windows will automatically select the best color profile from the list of associated color profiles [Recommended]

○ Manual: Manually select the default color profile for all output from this device from the list of associated color profiles

Default color profile: <None>

Color Profiles currently associated with this printer:

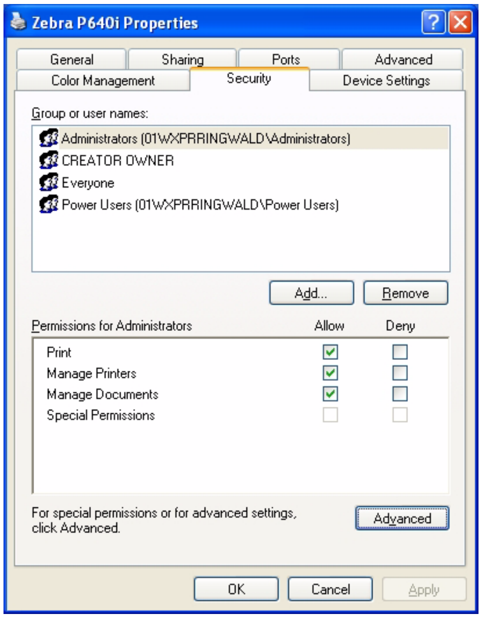
1. **Automatic** - Allows Windows to select the best color profile (default).

2. **Manual** - Allows the operator to select the desired profile from the list shown in the Color Profile Window.

## 2.7.6 Security Tab

This is the standard Windows security screen, showing user access to various printer control options. Both Print and Manage Printers *must* be checked for full functionality of the printer.

To access the Security tab, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Security.*


Zebra P640i Properties
General
Sharing
Ports
Advanced
Color Management
Security
Device Settings
Add...
Remove
Advanced
OK
Cancel
Apply

Group or user names:

- Administrators (01WXPRRINGWALD\Administrators)
- CREATOR OWNER
- Everyone
- Power Users (01WXPRRINGWALD\Power Users)

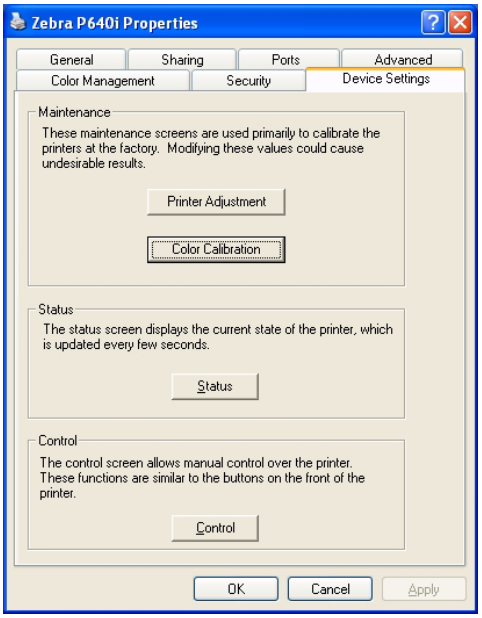
| Permissions for Administrators | Allow | Deny |
|---|---|---|
| Print | ☑ | ☐ |
| Manage Printers | ☑ | ☐ |
| Manage Documents | ☑ | ☐ |
| Special Permissions | ☐ | ☐ |

For special permissions or for advanced settings, click Advanced.

## 2.7.7 Device Settings Tab

The Device Settings screen allows you to access various adjustment and calibration screens.

To access the Device Settings tab, select *Start > Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties > Device Settings*.


Zebra P640i Properties
General
Sharing
Ports
Advanced
Color Management
Security
Device Settings
Maintenance
Printer Adjustment
Color Calibration
Status
Status
Control
Control
OK
Cancel
Apply

These maintenance screens are used primarily to calibrate the printers at the factory. Modifying these values could cause undesirable results.

The status screen displays the current state of the printer, which is updated every few seconds.

The control screen allows manual control over the printer. These functions are similar to the buttons on the front of the printer.

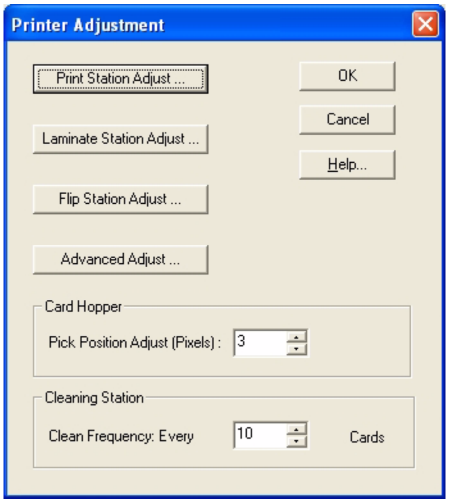
### 2.7.7.1 Printer Adjustment

---

**Caution •** Modifying these values could cause undesirable results.

---

To access the Printer Adjustment screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Device Settings* > *Printer Adjustment*


Printer Adjustment
Print Station Adjust ...
Laminate Station Adjust ...
Flip Station Adjust ...
Advanced Adjust ...
OK
Cancel
Help...

Card Hopper

Pick Position Adjust (Pixels) : 3

Cleaning Station

Clean Frequency: Every 10 Cards

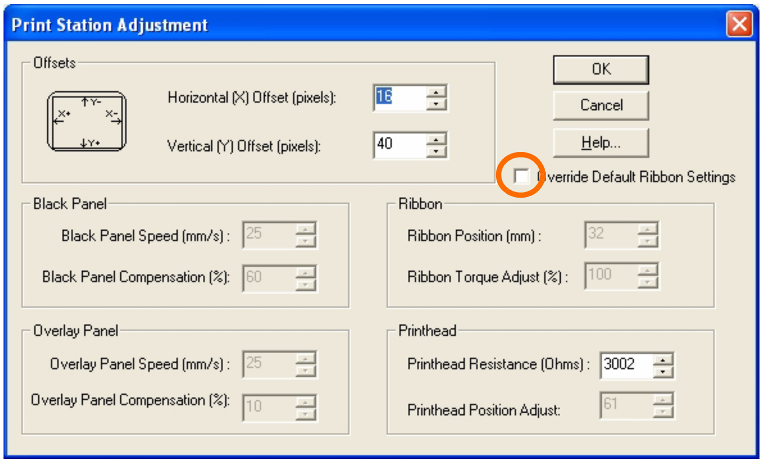
The following procedures can be performed via the Printer Adjustment screen:

- **Print Station Adjustment** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 62
- **Laminate Station Adjustment** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 64
- **Flip Station Adjustment** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 66
- **Advanced Adjustments** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 67
- **Card Hopper** (Pick Position Adjust (Pixels)**:** Adjusts the position of the truck when picking a card from the hopper.
- **Cleaning Station** (Clean Frequency): Runs clean cycle will be run after the specified number of cards have been printed. The clean frequency range is from 1 to 20, the default = 10.

## Print Station Adjustment

To access the Print Station Adjustment screen, select *Start > Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties > Device Settings > Printer Adjustment > Print Station Adjust...*

**Important •** Checking the box (circled in the figure below) will enable the greyed-out Print Station Adjustment settings to be changed.



Horizontal (X) Offset (pixels): 16
Vertical (Y) Offset (pixels): 40
☐ Override Default Ribbon Settings
Black Panel Speed (mm/s) : 25
Black Panel Compensation (%): 60
Ribbon Position (mm) : 32
Ribbon Torque Adjust (%) : 100
Overlay Panel Speed (mm/s) : 25
Overlay Panel Compensation (%): 10
Printhead Resistance (Ohms) : 3002
Printhead Position Adjust: 61

1. **Offsets**:

**Important •** Hold the card in the orientation that it exits the printer to determine which adjustment to make: **left** = trailing edge, **right** = leading edge.Failure to do so will result in the adjustments made being opposite of the desired result.

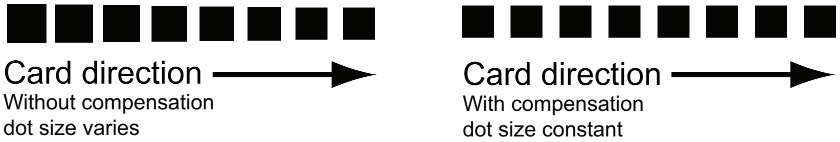
- **Horizontal (X) Offset (pixels)**: This is the number of pixels to shift the image to align it on the media. Increasing these values move the image left while decreasing them moves the image right. This parameter can be used to center the image on the card, or to align it with an edge.
- **Vertical (Y) Offset (pixels)**: This is the number of pixels to shift the image to align it on the media. Increasing these values moves the image down while decreasing them moves the image up. This parameter can be used to center the image on the card, or to align it with an edge.

2. **Ribbon** (Changing Ribbon values is *not recommended.*):

- **Ribbon Position (mm)**: The sensor position adjust determines the distance from the printhead dot line to the center of the gap interrupt sensor used to sense the ribbon sync mark (or resin black panel). The sensor adjustment can be used to control the offset from the start of a color panel to where the printing begins. To increase this offset, make the sensor adjustment larger. The default value = 32.
- **Ribbon Torque Adjust (%)**: This setting controls the torque of the ribbon take-up motor. This value should always be set to 100%.

3. **Black Panel** (Changing Black Panel values is *not recommended.*):

   - **Black Panel Speed (mm/s)**: These parameters determine the speed of the receptor movement during printing for black printing and overlay printing. This value should always be set to 25.
   - **Black Panel Compensation (%)**: If a line of black dots is printed along the card motion axis, the heating element (pixel) in question does not cool down completely between adjacent dots. Without compensation, the steadily increasing residual heat would cause the printed dot to increase noticeably in size (“bloom”), below left. Properly compensated, the dot size is reasonably constant, below right.



4. **Overlay Panel** (Changing Overlay Panel values is *not recommended.*):

**Note** • The term Overlay Panel refers to the second Black Panel or the first Uv Panel.

   - **Overlay Panel Speed (mm/s)**: These parameters determine the speed of the receptor movement during printing for black printing and overlay printing. This value should always be set to 25.
   - **Overlay Panel Compensation (%)**: If a line of black dots is printed along the card motion axis, the heating element (pixel) in question does not cool down completely between adjacent dots. Without compensation, the steadily increasing residual heat would cause the printed dot to increase noticeably in size (“bloom”), above left. Properly compensated, the dot size is reasonably constant, above right.

5. **Printhead**:

   - **Printhead Resistance (Ohms)**:

**Important** • If you replace the Printhead, change this value to match the resistance of the replacement printhead. The numbers must be the same for the algorithms to work properly.

This number is located on a sticker on the printhead cover and on the label applied to each printhead. The printhead resistance is also written on the inspection report shipped with each printer.

   - **Printhead Position Adjust**: This setting controls printhead pressure; also see Printhead Position (Height/Pressure) Adjustment on page 133.

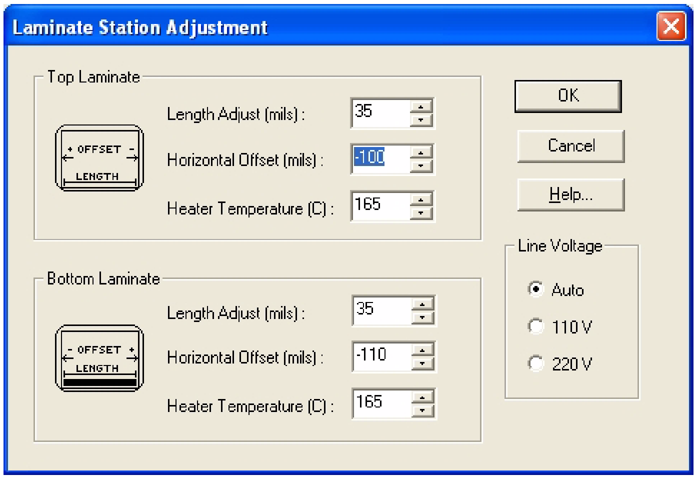
## Laminate Station Adjustment

To access the Laminate Station Adjustment screen, select *Start > Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties > Device Settings > Printer Adjustment > Laminate Station Adjust...*

The standard laminate patch length is 3.25” (82.55mm). Accurate positioning of the laminate is important for practical and aesthetic reasons. The laminate must cover the entire image as printed at the time of issuance, thus protecting critical data with a tamper-deterrent film.

If there is no magnetic stripe on the underside, a full width laminate should be used.

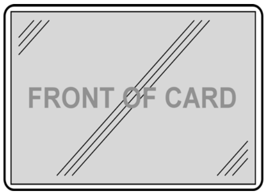
When using smart card or registered laminates and the length is too long or too short, use the Length Adjust (mils) option to make length adjustments as required.

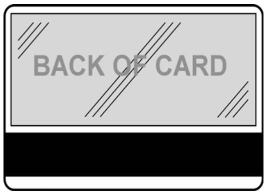


Top Laminate
Length Adjust (mils) : 35
Horizontal Offset (mils) : -100
Heater Temperature (C) : 165

Bottom Laminate
Length Adjust (mils) : 35
Horizontal Offset (mils) : -110
Heater Temperature (C) : 165

Line Voltage
● Auto
○ 110 V
○ 220 V





1. **Length Adjust (mils) -** This is the length of the laminate “patch”. If the patch is too long, decrease this number, and vice versa.

2. **Horizontal Offset (mils) -** Adjusts laminate placement on the card.

### 3. Heater Temperature

This is the set point temperature (i.e., the temperature desired) not the actual temperature. For actuals, see Sensor Data on page 71.

**Note** • Temperatures are monitored by thermocouples at the *core* of the heated rollers. Surface temperatures may differ significantly.

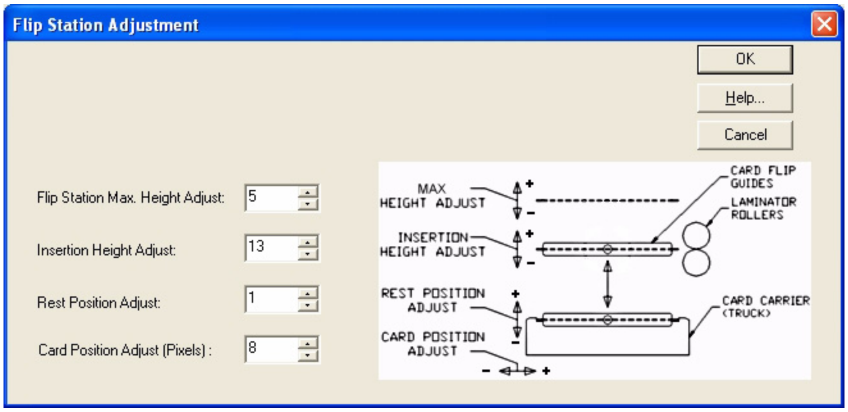
### 4. Line Voltage

**Caution** • Running the printer at 220V, 60Hz in Auto mode may cause premature failure of the heaters. Running the printer at 110V, 50Hz in Auto mode may cause abnormally long heat-up time and poor temperature control. Either will result in a heater error message in the printer status screen.

If Auto is selected, the printer guesses line voltage based on line frequency, assuming that 110V will be @ 60Hz and 230V @ 50Hz. If this is not the case in your locality, the printer will guess wrong; and you should set the voltage manually.

## Flip Station Adjustment

To access the Flip Station Adjustment screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Device Settings* > *Printer Adjustment* > *Flip Station Adjust...*



Flip Station Max. Height Adjust: 5

Insertion Height Adjust: 13

Rest Position Adjust: 1

Card Position Adjust (Pixels) : 8

1. **Flip Station Max. Height Adjust**: This parameter modifies the position to which the flip station rises while flipping a card. Increasing this parameter forces the flip station to rise to a higher position, while decreasing this parameter forces it to rise to a lower position. Setting this parameter too high will result in undue wear and tear on the machine. Setting it too low will result in failure to flip cards.

2. **Insertion Height Adjust**: This parameter modifies the position to which the flip station rises while inserting a card into the laminator. Increasing this parameter forces the flip station to insert at a higher position, while decreasing this parameter forces it to insert at a lower position. Setting this parameter too high or too low will result in failures to insert cards into the laminator.

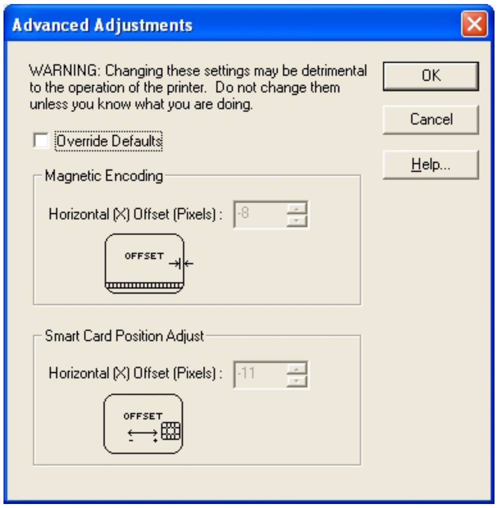
3. **Rest Position Adjust**: This parameter modifies the position at which the flip station rests when not flipping. Increasing this parameter forces the flip station to rest at a higher position, while decreasing this parameter forces it to rest at a lower position. Setting this parameter too high or too low will result in poor flips and dropped cards.

4. **Card Position Adjust (Pixels)**: This parameter modifies the distance that the card carrier drives in to the flip station. Increasing this parameter drives it further toward the laminator, while decreasing this parameter doesn't drive it as far into the laminator. Setting this parameter too high or too low will result in the card not being centered in the flip station, leading to poor flips and dropped cards.

## Advanced Adjustments

To access the Advanced Adjustments screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Device Settings* > *Printer Adjustment* > *Advanced Adjust...*

**Note •** These adjustments should only be made if the normal auto-calibration procedures do not allow these functions to work properly.



Advanced Adjustments

WARNING: Changing these settings may be detrimental to the operation of the printer. Do not change them unless you know what you are doing.

☐ Override Defaults

Magnetic Encoding

Horizontal (X) Offset (Pixels) : -8

Smart Card Position Adjust

Horizontal (X) Offset (Pixels) : -11

1. **Override Defaults**: Checking this box will enable the grayed out settings to be changed.
2. **Magnetic Encoding**: Adjust the start position of mag data on the mag stripe.
3. **Smart Card Position Adjust**: Adjusts the position of the card carrier under the smart card probe.

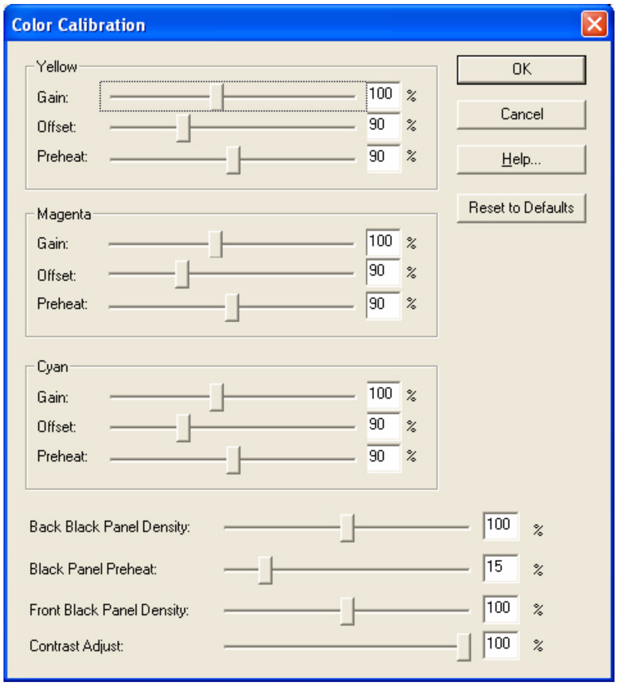
### 2.7.7.2 Color Calibration

To access the Color Calibration screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Device Settings* > *Color Calibration*

Color rendering in the printer can be described in terms of a curve, which determines how much power is put into the printhead for a given shade.

The Y, M and C color curves can be separately modified by the Gain and Offset parameters. Click Restore Defaults if you are not satisfied with adjustments made.

The following procedures can be performed from the Color Calibration screen:



Yellow
Gain: 100 %
Offset: 90 %
Preheat: 90 %

Magenta
Gain: 100 %
Offset: 90 %
Preheat: 90 %

Cyan
Gain: 100 %
Offset: 90 %
Preheat: 90 %

Back Black Panel Density: 100 %
Black Panel Preheat: 15 %
Front Black Panel Density: 100 %
Contrast Adjust: 100 %

**Note •** The values shown above are the default values; recommended settings (different from the default values) are shown on the next page.

**Note •** The values shown on the previous page are the default values; recommended settings (different from the default values) are given in the following descriptions.

1. **Gain -** Adjusts steepness of the curve. Lighter shades will remain unchanged, but darker shades will get darker or lighter as the number is increased or decreased.
   Recommended setting = 95%.

2. **Offset -** Shifts the color curve up (darker) and down (lighter).
   Recommended setting = 95%.

3. **Preheat -** Adjusts how much the head is preheated before each print line (every three hundredths of an inch). A larger value darkens (sharpens) the leading edges of colored areas. A lower value may result in “feathering” - starting light, then darkening over the following few pixels as the head heats up.
   Recommended setting = 90%.

4. **Back Black Panel Density -** This controls the amount of heat energy applied to any pixel required to be black. A higher value gives darker printing, but can cause undesirable blooming (indefinite edges).
   Recommended setting = 100%.

5. **Black Panel Preheat -** Temperature offset applied across the entire head, specifically for K panel printing. A higher value results in better resin transfer on the leading edge of graphics and text than you would get with a cold start, but it may lead to undesirable blooming (indefinite edges) overall.
   Recommended setting = 15%.

6. **Front Black Panel Density -** This controls the amount of heat energy applied to any pixel required to be black. A higher value gives darker printing, but can cause undesirable blooming (indefinite edges).
   Recommended setting = 100%.

7. **Contrast Adjust -** A subtle color printing control, allows the user to shape the printer’s lightness curve. This means the ability to control how the printer resolves, or differentiates, the lighter and darker shades.

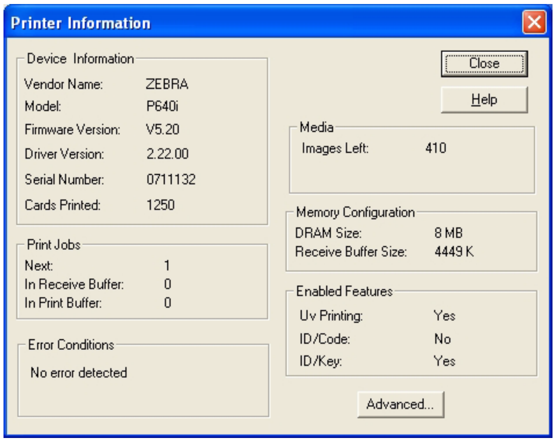
   Between contrast settings of 0 and 100, the lightness curve transitions from linear to sinusoidal. Linear (0%) tends to result in a low contrast, muddy looking image. Sinusoidal (100%) gives mostly good results, but tends to sacrifice the lightest and darkest shades.
   Recommended setting = 80%.

**Important •** The printer must be power cycled for any adjustments to take effect.

### 2.7.7.3 Status

The Status screen displays the current state of the printer and provides standard printer information and sensor data, which is updated every few seconds.

To access the Status screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Device Settings* > *Status*



Device Information
Vendor Name: ZEBRA
Model: P640i
Firmware Version: V5.20
Driver Version: 2.22.00
Serial Number: 0711132
Cards Printed: 1250

Print Jobs
Next: 1
In Receive Buffer: 0
In Print Buffer: 0

Error Conditions
No error detected

Media
Images Left: 410

Memory Configuration
DRAM Size: 8 MB
Receive Buffer Size: 4449 K

Enabled Features
Uv Printing: Yes
ID/Code: No
ID/Key: Yes

1. **Media**

   **Images Left:** The exact number of YMCK sets remaining on the color ribbon, as reported by the color ribbon core.

2. **Enabled Features**

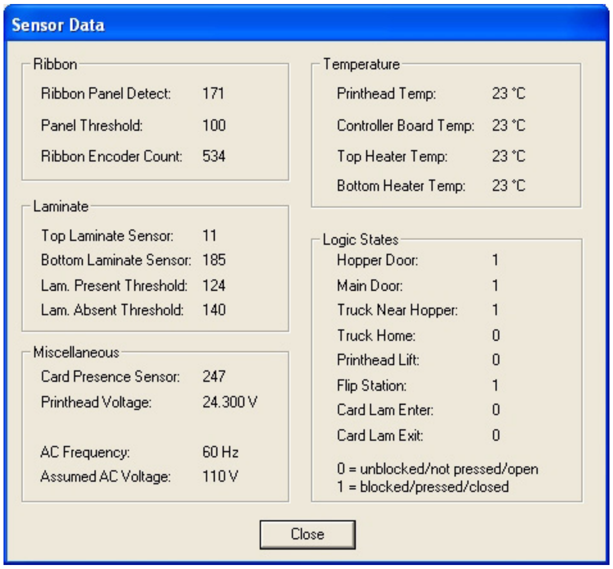
   a. **Uv Printing**: Uv Printing is enabled in manufacture or by field technician.

   b. **ID/Code:** ID/Code (the user password) is enabled by the user.

   c. **ID/Key:** ID/Key requires installation of a physical key. This displays “Yes” once the printer has locked itself to the key, not just because it has the key installed.

## Sensor Data

These are of several different types of sensors and interlock switches, but they have one thing in common - they tell the printer’s control logic what is happening and where, enabling it to continue with the process or, if a malfunction occurs, to light the appropriate indicator light and report a specific error condition on the host computer screen.



Ribbon

| | |
|---|---|
| Ribbon Panel Detect: | 171 |
| Panel Threshold: | 100 |
| Ribbon Encoder Count: | 534 |

Laminate

| | |
|---|---|
| Top Laminate Sensor: | 11 |
| Bottom Laminate Sensor: | 185 |
| Lam. Present Threshold: | 124 |
| Lam. Absent Threshold: | 140 |

Miscellaneous

| | |
|---|---|
| Card Presence Sensor: | 247 |
| Printhead Voltage: | 24.300 V |
| AC Frequency: | 60 Hz |
| Assumed AC Voltage: | 110 V |

Temperature

| | |
|---|---|
| Printhead Temp: | 23 °C |
| Controller Board Temp: | 23 °C |
| Top Heater Temp: | 23 °C |
| Bottom Heater Temp: | 23 °C |

Logic States

| | |
|---|---|
| Hopper Door: | 1 |
| Main Door: | 1 |
| Truck Near Hopper: | 1 |
| Truck Home: | 0 |
| Printhead Lift: | 0 |
| Flip Station: | 1 |
| Card Lam Enter: | 0 |
| Card Lam Exit: | 0 |

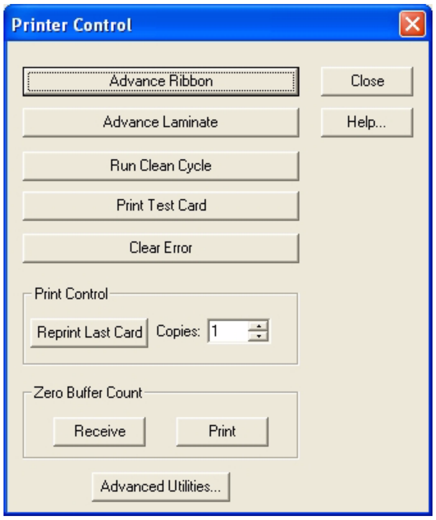
0 = unblocked/not pressed/open
1 = blocked/pressed/closed

1. **Ribbon Panel Detect -** The current reading of the Color Sensor.
2. **Panel Threshold -** The current value of the detection threshold for the color ribbon. Above this value is termed “black,” below this value is termed “not black.”
3. **Laminate Sensors -** Reflective sensor that detect the presence of laminate on the transfer rollers: below 124 = laminate present, above 140 = laminate absent.
4. **Card Presence Sensor -** The reflective sensor to the right of the card hopper: High = no card, Low = card present
5. **Printhead Voltage -** Should be about 24V.
6. **AC Frequency -** 50 or 60 Hz.
7. **Assumed AC Voltage -** 110V assumed for 60 Hz.
8. **Printhead Temperature -** Temperature ceiling 70°C (above that temperature, printing is stopped until the head cools).
9. **Controller Board Temperature -** Should be about 5° above ambient.
10. **Heater Temperature -** Temperatures at the top and bottom laminate heater cores.
11. **Logic States -** Summarizes all two-state interlocks and photo sensors -- a very useful diagnostic tool. For example: opening/closing the doors will result in the logic states to commute from 1 to 0; and if not, it is a clear indication the sensor (switch) is faulty.

### 2.7.7.4 Control

The Control screen allows manual control over the printer. Some of these functions are similar to the buttons on the front of the printer.

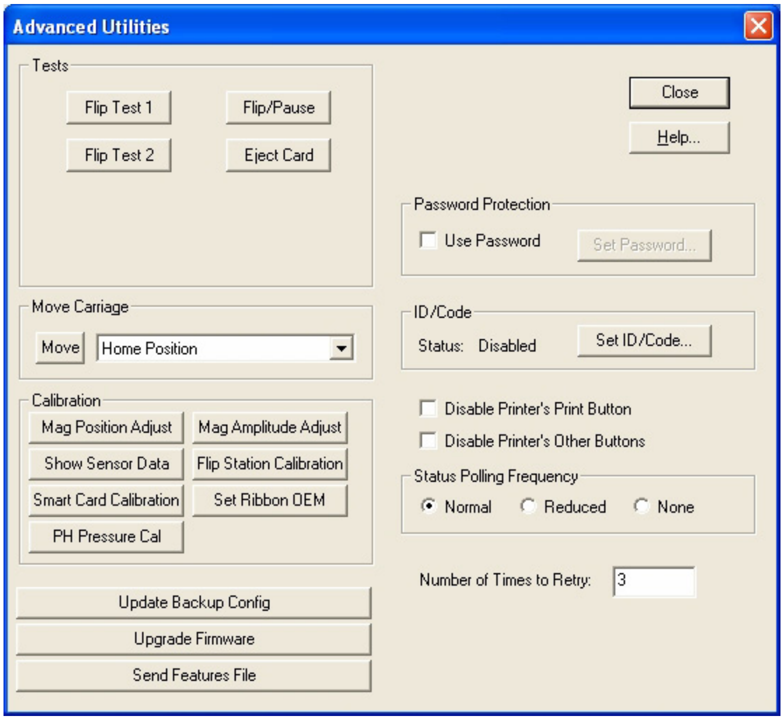
To access the Control screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Device Settings* > *Control*


Printer Control
Advance Ribbon
Close
Advance Laminate
Help...
Run Clean Cycle
Print Test Card
Clear Error
Print Control
Reprint Last Card
Copies: 1
Zero Buffer Count
Receive
Print
Advanced Utilities...

The following procedures can be performed from the Control screen (note that #1, #2 and #6 perform the same functions as the front panel buttons):

1. **Advance Ribbon**: Advances the print ribbon to the next set of panels. Use this after a ribbon jam or when you load a new ribbon.
2. **Advance Laminate**: Advances the Laminate onto the rollers, under the flex guides. If the laminate chips are already loaded, this will have no effect.
3. **Run Clean Cycle**: Activates the clean cycle to clean the sticky roller.
4. **Print Test Card**: This will print a test card containing driver configuration information
5. **Clear Error**: Clears some error conditions within the printer to allow printing to resume.
6. **Print Control** (Reprint Last Card and Copies): Activate a reprint of a card. You can also set the number of copies to print.
7. **Zero Buffer Count**:
    - **Receive**: If an error occurred, there may be a card image stuck in the receive buffer. This clears the receive buffer if you do not want to print it.
    - **Print**: If an error occurred, there may be a card image stuck in the print buffer. This clears the print buffer if you do not want to print it.
8. **Advanced Utilities...** : See Advanced Utilities: on page 73.

## Advanced Utilities:


Advanced Utilities
Tests
Flip Test 1
Flip/Pause
Flip Test 2
Eject Card
Close
Help...
Password Protection
Set Password...
Move Carriage
Move
ID/Code
Set ID/Code...
Calibration
Mag Position Adjust
Mag Amplitude Adjust
Show Sensor Data
Flip Station Calibration
Smart Card Calibration
Set Ribbon OEM
PH Pressure Cal
Status Polling Frequency
Update Backup Config
Upgrade Firmware
Send Features File

Move Carriage: Home Position

☐ Use Password

ID/Code Status: Disabled

☐ Disable Printer's Print Button

☐ Disable Printer's Other Buttons

Status Polling Frequency: ● Normal ○ Reduced ○ None

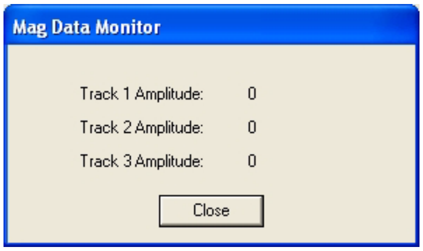
Number of Times to Retry: 3

1. **Tests**: Activate various flip tests, used to troubleshoot flip station problems; and activate a card eject cycle.
    - Flip Test 1 - Picks up a card, runs it to the flip station, flips it, raises it to the laminator infeed, then ejects it through the laminator. The sequence repeats until the PRINT button is pressed and released.
    - Flip Test 2 - Picks up a card, runs it to the flip station, flips it, returns it to the Platen, then backs it out to the card sensor (by the mag head). The sequence repeats until the PRINT button is pressed and released.
    - Flip/Pause - Picks up a card, runs it to the flip station, raises it to the laminator infeed, then holds this position (termed the Insertion Height in the flip station dialog) until the user presses the PRINT button (at which point the flip carrier descends, and the truck returns the card to the hopper).
    - Eject Card - Picks up a card, runs it to the flip station, raises it to the laminator infeed, then ejects it through the laminator. Like Flip Test 1, but done once only, and without flipping.
2. **Move Carriage**: Use this button to move the card carrier to the desired position. This is useful when adjusting the mechanical settings on the printer.

3. **Calibration**: Use these to adjust the mag head and printer sensors:

   d. Mag Position Adjust

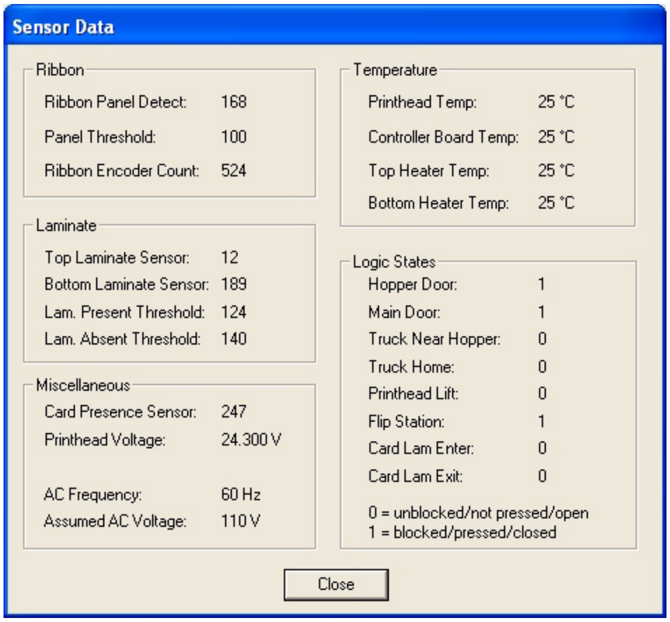
   e. Mag Amplitude Adjust



Mag Data Monitor

Track 1 Amplitude: 0
Track 2 Amplitude: 0
Track 3 Amplitude: 0

   f. Show Sensor Data



Sensor Data

Ribbon
Ribbon Panel Detect: 168
Panel Threshold: 100
Ribbon Encoder Count: 524

Laminate
Top Laminate Sensor: 12
Bottom Laminate Sensor: 189
Lam. Present Threshold: 124
Lam. Absent Threshold: 140

Miscellaneous
Card Presence Sensor: 247
Printhead Voltage: 24.300 V
AC Frequency: 60 Hz
Assumed AC Voltage: 110 V

Temperature
Printhead Temp: 25 °C
Controller Board Temp: 25 °C
Top Heater Temp: 25 °C
Bottom Heater Temp: 25 °C

Logic States
Hopper Door: 1
Main Door: 1
Truck Near Hopper: 0
Truck Home: 0
Printhead Lift: 0
Flip Station: 1
Card Lam Enter: 0
Card Lam Exit: 0

0 = unblocked/not pressed/open
1 = blocked/pressed/closed

   g. Flip Station Calibration: This routine determines the number of motor steps it takes for the carrier to descend from the *upper limit* position to the *lower limit* position; i.e., the carrier's physical end stop. This step count is saved in flash memory and is used to drive the carrier down to the rest position before each and every flip station action.

   h. Smart Card Calibration

   i. Set Ribbon OEM (not used)

   j. PH Pressure Calibration

4. **Update Backup Config**: Causes the printer to update its backup configuration with the printer's current settings.

5. **Upgrade Firmware**:

---

**Caution •** This should only be done when you have downloaded an upgrade firmware file from Zebra.

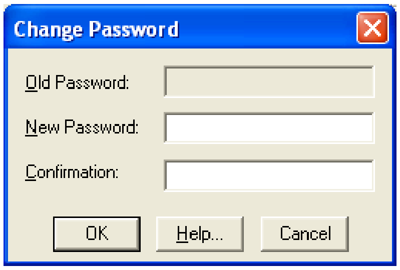
---

Sends a new version of firmware to the printer.

6. **Send Features File**: Send a Features File to the printer. A Features File is sent for the purposes of enabling Uv printing, resetting a dongle, or resetting the printer's password.

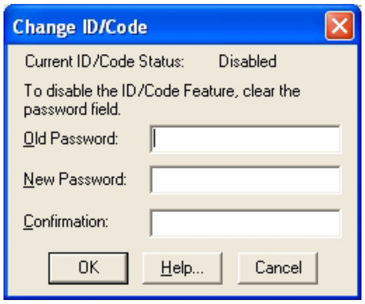
7. **Password Protection**: Enable or disable password protection to prevent someone from changing the Printer Properties.

When the Use Password checkbox is checked, the following pop-up appears:



- Enter the new password into the New Password and Confirmation fields. Click "OK". The password is now set.
- To *change* the password, click the "Use Password" checkbox. Enter the old password into the Old Password field, and enter the new password into the New Password and Confirmation fields. Click "OK". The password is now changed.
- To *disable* the password click, the "Use Password" checkbox. Enter the old password into the Old Password field; and leave the New Password and Confirmation fields blank. Click "OK". The password is now disabled.

8. **ID/Code**: ID/Code is a security feature that restricts the use of the printer to PC's which have had a password entered. Once entered, the PC will send this password to the printer. If the printer does not receive the password, it will not print.


Change ID/Code

Current ID/Code Status: Disabled

To disable the ID/Code Feature, clear the password field.

- To *enable* the password, click “Set ID/Code”. Leave the Old Password field blank, and enter the new password into the New Password and Confirmation fields. Click “OK”. The password is now set.
- To *change* the password, click “Set ID/Code”. Enter the old password into the Old Password field, and enter the new password into the New Password and Confirmation fields. Click “OK”. The password is now changed.
- To *disable* the password, click “Set ID/Code”. Enter the old password into the Old Password field, and leave the New Password and Confirmation fields blank. Click “OK”. The password is now disabled.

9. **Disable Printer’s Print Button**: Enable or disable the front panel Print button to prevent card reprinting.

10. **Disable Printer’s Other Buttons**: Enable or disable the front panel Ribbon and Laminate buttons.

11. **Status Polling Frequency**:

Note • For EIN to work correctly, the *None* option needs to be selected.

- *Normal*: This is the default for directly connected printers.
- *Reduced*: This is the default for a printer connected via Ethernet. This eliminates problems caused by timeout, because the driver polls the printer less often.
- *None*: Selecting this option stops the driver from checking the printer for errors. The driver just sends print jobs and assume everything is well with the printer. If the printer stops printing, the reason must be determined via the front panel condition lights.

12. **Number of Times to Retry**: This number indicates the number of times the driver should attempt to communicate with the printer if it gets a failure. The default is 3.

## 2.8 Changing the Printing Preferences

To access the Printing Preferences screens, select *Start* > *Printers and Faxes, then* right click *Zebra P630i* or *Zebra P640i* printer and select *Printing Preferences*.

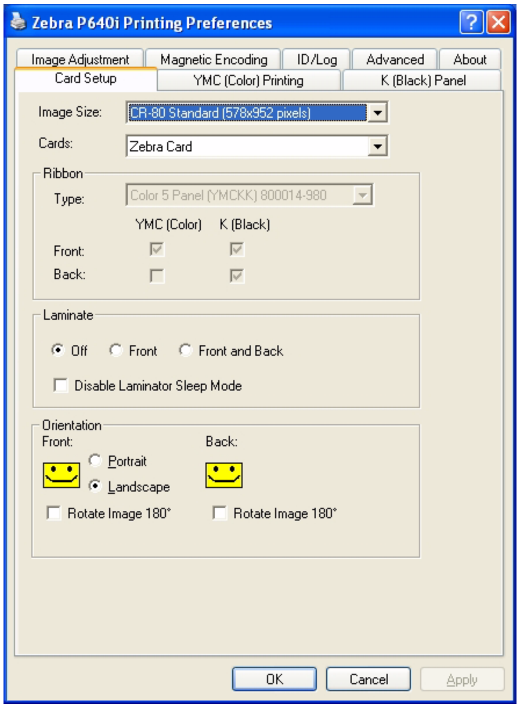

Zebra P640i Printing Preferences
Image Adjustment
Magnetic Encoding
ID/Log
Advanced
About
Card Setup
YMC (Color) Printing
K (Black) Panel
OK
Cancel
Apply

Image Size: CR-80 Standard (578x952 pixels)

Cards: Zebra Card

Ribbon

Type: Color 5 Panel (YMCKK) 800014-980

| | YMC (Color) | K (Black) |
|---|---|---|
| Front: | ☑ | ☑ |
| Back: | ☐ | ☑ |

Laminate

● Off ○ Front ○ Front and Back

☐ Disable Laminator Sleep Mode

Orientation

Front: ○ Portrait ● Landscape

☐ Rotate Image 180°

Back:

☐ Rotate Image 180°

- **Card Setup Tab** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 78
- **YMC (Color) Printing Tab** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 79
- **K (Black) Panel Tab** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 80
- **Image Adjustment Tab** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 82
- **Magnetic Encoding Tab** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 84
- **ID/Log Tab** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 85
- **Advanced Tab** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 87
- **About Tab** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 88

## 2.8.1 Card Setup Tab

Card Setup allows the user to adjust selected card parameters.

To access the Card Setup screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Printing Preferences* > *Card Setup*.

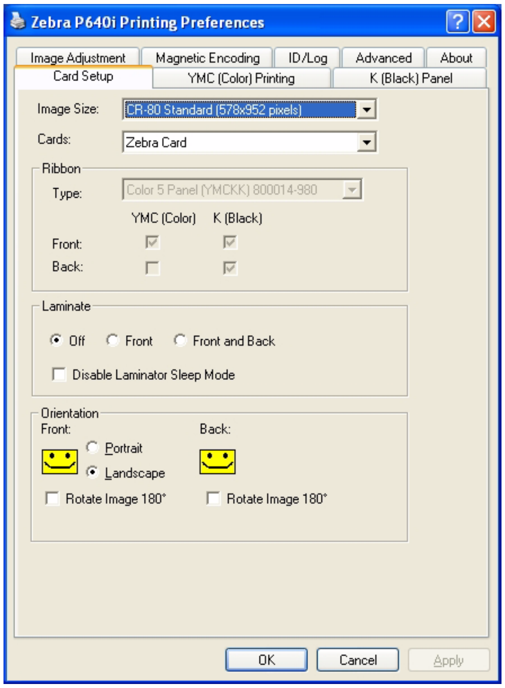


Image Size: CR-80 Standard (578x952 pixels)

Cards: Zebra Card

Ribbon

Type: Color 5 Panel (YMCKK) 800014-980

| | YMC (Color) | K (Black) |
|---|---|---|
| Front: | ☑ | ☑ |
| Back: | ☐ | ☑ |

Laminate

● Off ○ Front ○ Front and Back

☐ Disable Laminator Sleep Mode

Orientation

Front: ○ Portrait ● Landscape ☐ Rotate Image 180°

Back: ☐ Rotate Image 180°

1. **Image Size -** Sets the image area for both front and back of the card (1 inch = 300 pixels).

2. **Cards -** Specifies the type of card loaded in the hopper. “Zebra Card” is the only option.

3. **Ribbon -** This is the color ribbon installed in the printer. This is not user selectable but is setup by the RFID. For most applications, two types are available: YMCK = 3 color panels + 1 black panel, and YMCKK = 3 color panels + 2 black panels. For secure applications, a third type is available: YMCUvK (“Uv” is a panel of ultraviolet responsive resin). When using a printer with RFID, this option is not selectable.

4. **Front/Back -** Allows you to apply color or black, or both, to either side of the card. For example, with a 4-panel YMCK ribbon the usual arrangement is YMC (Color) on the front, K (Black) on the back. If you check both YMC and K on one side, this sets up a special condition known as black extraction.

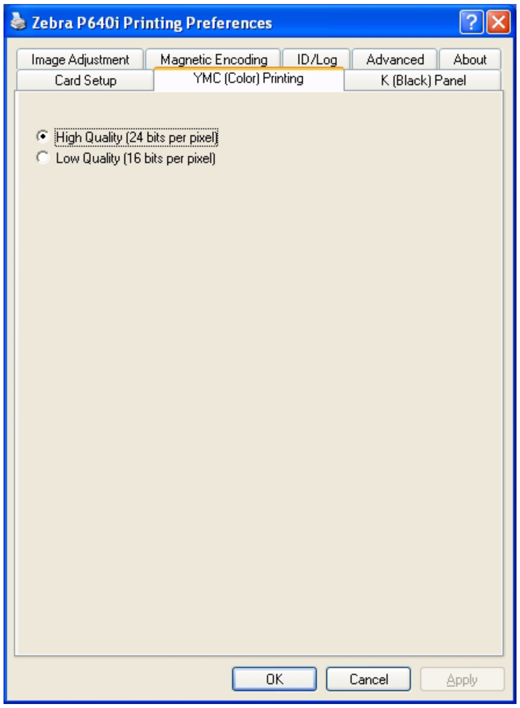
5. **Laminate -** Allows you to choose whether laminate will be applied to the front side, to both sides (P640*i* Printer only), or to neither side. This option will automatically turn on the heaters.

6. **Orientation -** Allows you to set up the front and back images, independently, for landscape or portrait orientation. By checking the *Rotate* box, you can also flip either image upside down. The following combination is not available: Front landscape and Back portrait.

## 2.8.2 YMC (Color) Printing Tab

YMC (Color) Printing allows the user to adjust selected color printing parameters.

To access the YMC (Color) Printing screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Printing Preferences* > *YMC (Color) Printing*.


Zebra P640i Printing Preferences
Image Adjustment
Magnetic Encoding
ID/Log
Advanced
About
Card Setup
YMC (Color) Printing
K (Black) Panel
OK
Cancel
Apply

● High Quality (24 bits per pixel)
○ Low Quality (16 bits per pixel)

The printer accepts 24-bit color images, meaning that each of the colors (Y, M and C) is represented by 8 bits per pixel.

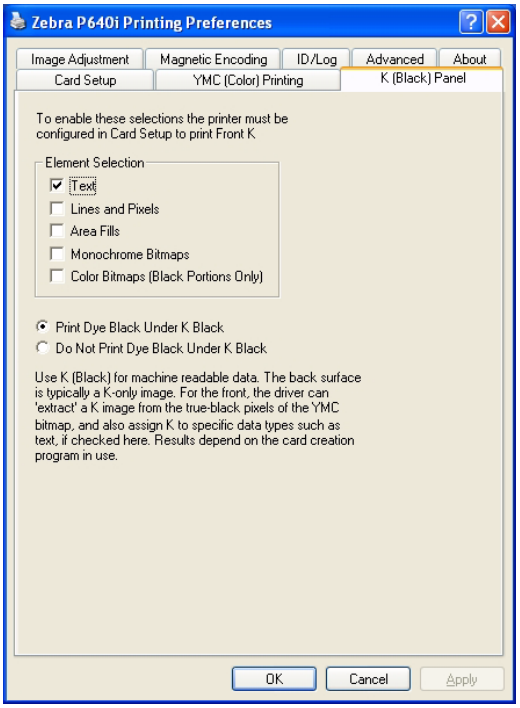
- In High Quality, the default setting, all 24 bits are processed.
- In Low Quality, the printer driver transmits a smaller amount, 16 bits, of color information, the effect being a slight degradation of the printed image.

With a USB Connection (standard interface configuration), there will be no noticeable difference.

## 2.8.3 K (Black) Panel Tab

When the Card Setup screen is set for YMC and K on the same side of a card, a process called Black Extraction is enabled. The K (Black) Panel screen displays available options for Black Extraction.

To access the K (Black) Panel screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Printing Preferences* > *K (Black) Panel.*



To enable these selections the printer must be configured in Card Setup to print Front K

Element Selection

☑ Text
☐ Lines and Pixels
☐ Area Fills
☐ Monochrome Bitmaps
☐ Color Bitmaps (Black Portions Only)

● Print Dye Black Under K Black
○ Do Not Print Dye Black Under K Black

Use K (Black) for machine readable data. The back surface is typically a K-only image. For the front, the driver can 'extract' a K image from the true-black pixels of the YMC bitmap, and also assign K to specific data types such as text, if checked here. Results depend on the card creation program in use.

**Black Extraction**

Black extraction has to do with the way the printer driver handles the K (black) panel. The term applies *only* to the surfaces of the card on which *both* YMC (color) *and* K (black) are to be printed.

Equal amounts of Y, M, and C dyes, at maximum intensity, deliver a near-black image, but one that is not machine readable. A bar code printed from YMC will be visible to the eye, but will not be detectable by most bar code readers.

The remedy for this is to extract the black; which means printing the same bar code, using the K panel, on top of the YMC bar code. You can also choose to print only in K, omitting YMC from that region. The K panel is not a dye. It is more of a paint containing carbon black, which is highly visible to infrared-type readers.

**Elements Selection -** Depending on the program used to create the card layout, elements of the design may be identified in different ways to the printer driver. This printer driver recognizes five types of elements:

- **Text** is text which is sent explicitly as such to the printer driver.
- **Lines and pixels** are lines and dots (pixels) sent as such to the printer driver.
- **Area fills** are color-filled geometric shapes.
- **Monochrome bitmaps** are 1-bit bitmaps (every pixel either black or white).
- **Color bitmaps (black portions only)** are full color un-compressed pixel maps.

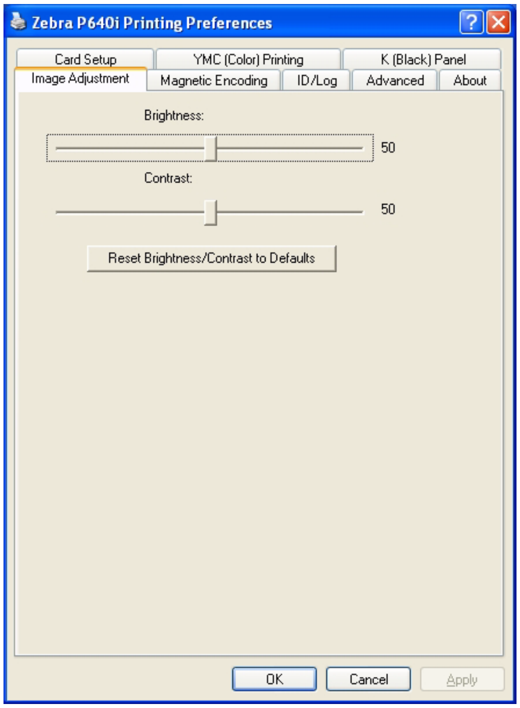
The above elements may not always be sent to the driver as expected. For example, a bar code may be sent as text, a series of area fills, or a monochrome bitmap. Results will vary by application used to create the card design.

Any of the above five elements may be selected for black extraction when the ribbon is set up to apply YMC (color) and K (black) to the same surface of the card. In this condition, the driver generates an extracted K image by looking for “true-black” features in the selected element types, that is, instances where all three YMC values are at the maximum (full intensity). Each such true-black instance generates a corresponding cluster of black pixels in the extracted image, which will be printed with the K (black) panel either on top of the YMC image, or replacing it entirely – your choice.

## 2.8.4 Image Adjustment Tab

From the Image Adjustment screen, the operator can adjust the brightness and contrast of the images printed on the cards.

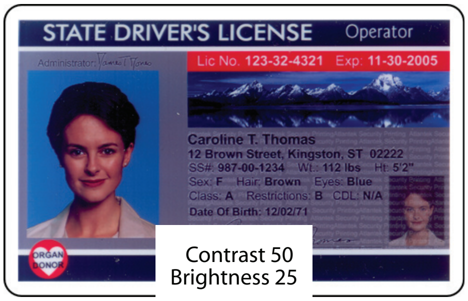
To access the Image Adjustment screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Printing Preferences* > *Image Adjustment.*


Zebra P640i Printing Preferences
Card Setup
YMC (Color) Printing
K (Black) Panel
Image Adjustment
Magnetic Encoding
ID/Log
Advanced
About
Brightness:
50
Contrast:
50
Reset Brightness/Contrast to Defaults
OK
Cancel
Apply

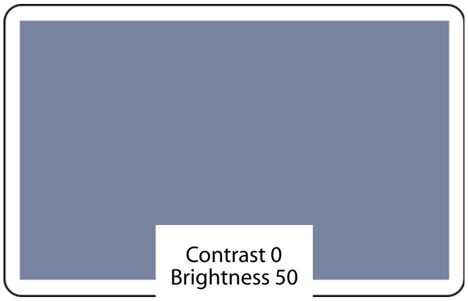
**Brightness and Contrast**: Controls on the Image Adjustment screen have same effect on the printed image as do similar controls on typical office color printers.

Move the slide bars to adjust the brightness and contrast of the cards being printed.

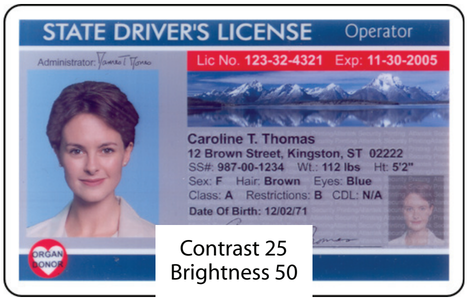
Here are some sample prints to illustrate the effects of changing the brightness and contrast settings:


STATE DRIVER'S LICENSE
Operator
Administrator:
Lic No. 123-32-4321 Exp: 11-30-2005
Caroline T. Thomas
12 Brown Street, Kingston, ST 02222
SS#: 987-00-1234 Wt.: 112 lbs Ht: 5'2"
Sex: F Hair: Brown Eyes: Blue
Class: A Restrictions: B CDL: N/A
Date Of Birth: 12/02/71
ORGAN DONOR

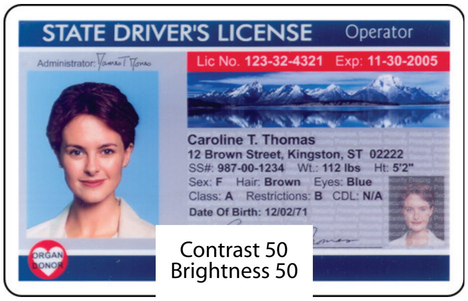
Contrast 50
Brightness 25



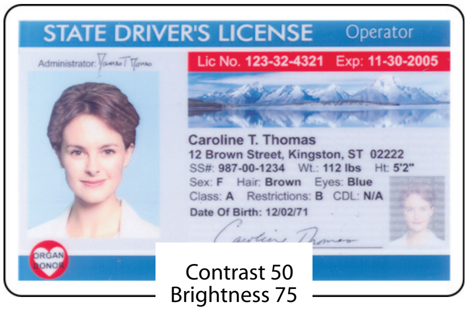
Contrast 0
Brightness 50


STATE DRIVER'S LICENSE
Operator
Administrator:
Lic No. 123-32-4321 Exp: 11-30-2005
Caroline T. Thomas
12 Brown Street, Kingston, ST 02222
SS#: 987-00-1234 Wt.: 112 lbs Ht: 5'2"
Sex: F Hair: Brown Eyes: Blue
Class: A Restrictions: B CDL: N/A
Date Of Birth: 12/02/71
ORGAN DONOR

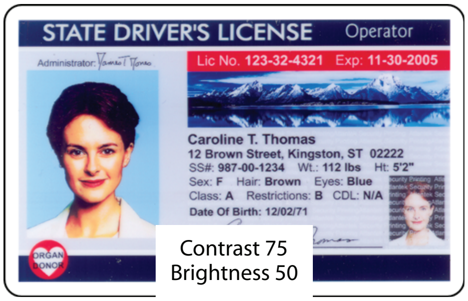
Contrast 25
Brightness 50


STATE DRIVER'S LICENSE
Operator
Administrator:
Lic No. 123-32-4321 Exp: 11-30-2005
Caroline T. Thomas
12 Brown Street, Kingston, ST 02222
SS#: 987-00-1234 Wt.: 112 lbs Ht: 5'2"
Sex: F Hair: Brown Eyes: Blue
Class: A Restrictions: B CDL: N/A
Date Of Birth: 12/02/71
ORGAN DONOR

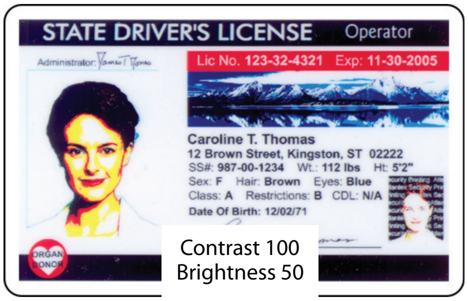
Contrast 50
Brightness 50


STATE DRIVER'S LICENSE
Operator
Administrator:
Lic No. 123-32-4321 Exp: 11-30-2005
Caroline T. Thomas
12 Brown Street, Kingston, ST 02222
SS#: 987-00-1234 Wt.: 112 lbs Ht: 5'2"
Sex: F Hair: Brown Eyes: Blue
Class: A Restrictions: B CDL: N/A
Date Of Birth: 12/02/71
ORGAN DONOR

Contrast 50
Brightness 75


STATE DRIVER'S LICENSE
Operator
Administrator:
Lic No. 123-32-4321 Exp: 11-30-2005
Caroline T. Thomas
12 Brown Street, Kingston, ST 02222
SS#: 987-00-1234 Wt.: 112 lbs Ht: 5'2"
Sex: F Hair: Brown Eyes: Blue
Class: A Restrictions: B CDL: N/A
Date Of Birth: 12/02/71
ORGAN DONOR

Contrast 75
Brightness 50


STATE DRIVER'S LICENSE
Operator
Administrator:
Lic No. 123-32-4321 Exp: 11-30-2005
Caroline T. Thomas
12 Brown Street, Kingston, ST 02222
SS#: 987-00-1234 Wt.: 112 lbs Ht: 5'2"
Sex: F Hair: Brown Eyes: Blue
Class: A Restrictions: B CDL: N/A
Date Of Birth: 12/02/71
ORGAN DONOR

Contrast 100
Brightness 50

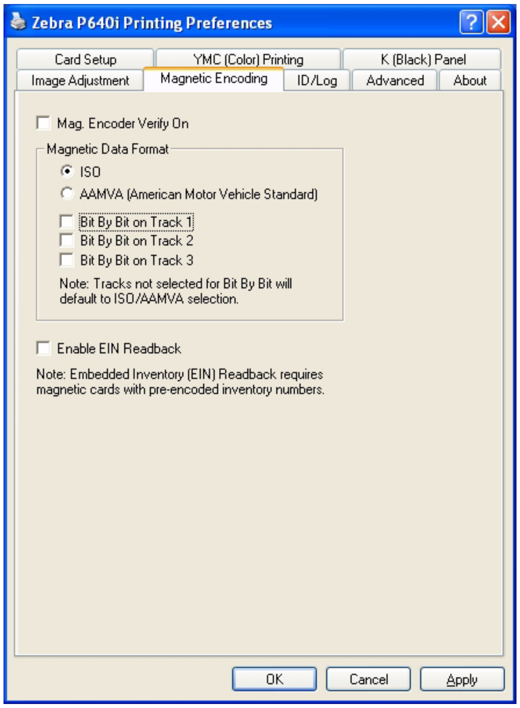
Click the Reset button to return to default Brightness (50) and Contrast (50) settings.

## 2.8.5 Magnetic Encoding Tab

**Important •** If you have the Magnetic Stripe Encoder option installed, ensure that the *Mag. Encoder Verify On* checkbox is checked.

The Magnetic Encoding screen allows the user to set various magnetic encoding options.

To access the Magnetic Encoding screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Printing Preferences* > *Magnetic Encoding.*



☐ Mag. Encoder Verify On

Magnetic Data Format

● ISO
○ AAMVA (American Motor Vehicle Standard)

☐ Bit By Bit on Track 1
☐ Bit By Bit on Track 2
☐ Bit By Bit on Track 3

Note: Tracks not selected for Bit By Bit will default to ISO/AAMVA selection.

☐ Enable EIN Readback

Note: Embedded Inventory (EIN) Readback requires magnetic cards with pre-encoded inventory numbers.

- **Mag Encoder Verify On**: If this box is checked, every card is run twice under the read/ write head. The first pass writes the code, and second reads it to check for accuracy and readability. Any card not passing this test is ejected through the laminator without printing. Verification adds only 3 seconds to the processing time per card, and is recommended for all applications not calling for the highest possible throughput.
- **Bit by Bit Encoding**: This is used only in applications calling for a custom designed encoding format. Call Zebra Tech Support for more information.
- **Enable EIN Readback**: Applicable only in applications using cards with pre-encoded (“embedded”) inventory numbers.

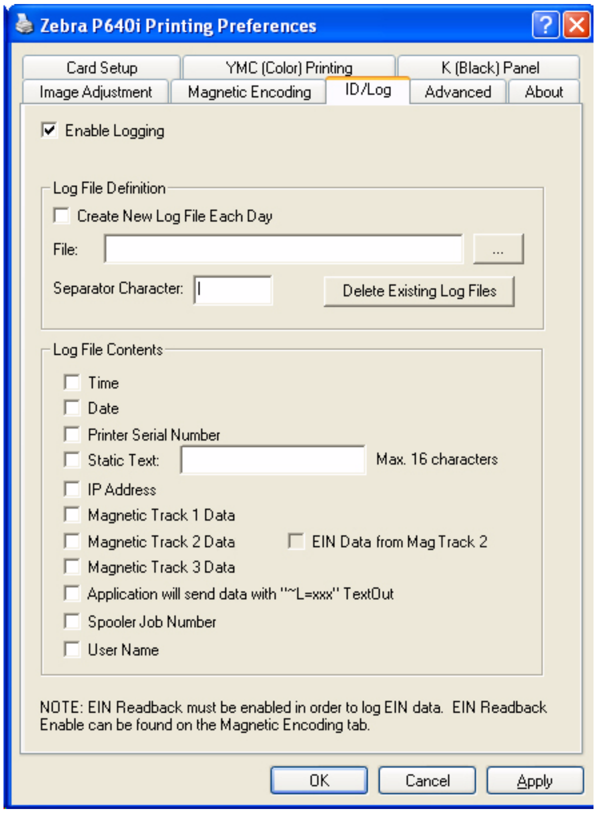
## 2.8.6 ID/Log Tab

The ID/Log is a driver utility that builds a database of card transactions in the printer's host computer.

**Important •** Make sure Status Polling Frequency is enabled by selecting **Normal** or **Reduced**. To access the Status Polling Frequency option, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Device Settings* > *Control* > *Advanced Utilities*.

ID/Log records data encoded on the card's magnetic stripe, together with date, time, and the printer's serial number. The data set can be uploaded at any time to a central archive, thus providing a means for security officers to validate the card by comparing it with tamper-proof "real data".

To access the ID/Log screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Printing Preferences* > *ID/Log*.


Zebra P640i Printing Preferences
Card Setup
YMC (Color) Printing
K (Black) Panel
Image Adjustment
Magnetic Encoding
ID/Log
Advanced
About
Log File Definition
Log File Contents
...
Delete Existing Log Files
OK
Cancel
Apply

☑ Enable Logging

☐ Create New Log File Each Day
File:
Separator Character: |

☐ Time
☐ Date
☐ Printer Serial Number
☐ Static Text: Max. 16 characters
☐ IP Address
☐ Magnetic Track 1 Data
☐ Magnetic Track 2 Data ☐ EIN Data from Mag Track 2
☐ Magnetic Track 3 Data
☐ Application will send data with "~L=xxx" TextOut
☐ Spooler Job Number
☐ User Name

NOTE: EIN Readback must be enabled in order to log EIN data. EIN Readback Enable can be found on the Magnetic Encoding tab.

**Important •** In order to log either Magnetic Stripe or Barcode EIN data, EIN Readback must be enabled. **Enable EIN Readback** can be found on the *Magnetic Encoding* tab; see Section 2.8.5.

1. **Enable Logging -** If this box is checked, the logging feature is enabled.
2. **Log File Definition -** Choose one of the following options:
   - If the “Create New Log File Each Day” box is unchecked, click Browse (...) to navigate to a directory (folder) in which to save the log file.
   - If the box is checked, “File” changes to “Path”, and the Browse button becomes inoperative, requiring the directory to be entered manually.
   - The file generated by ***ID/Log*** is of the type **MMDDYYYY.log**.
   - In addition to the file or folder name, you may wish to specify a field Separator Character other than the default, “|”.
3. **Log File Contents -** The Log File Contents group selects the data to be logged in the file you specified as above. The data will be logged in the order displayed on the screen, each field being separated by the character specified in the Log File Definition. Data files are named by date in this format: MM/DD/YYYY.

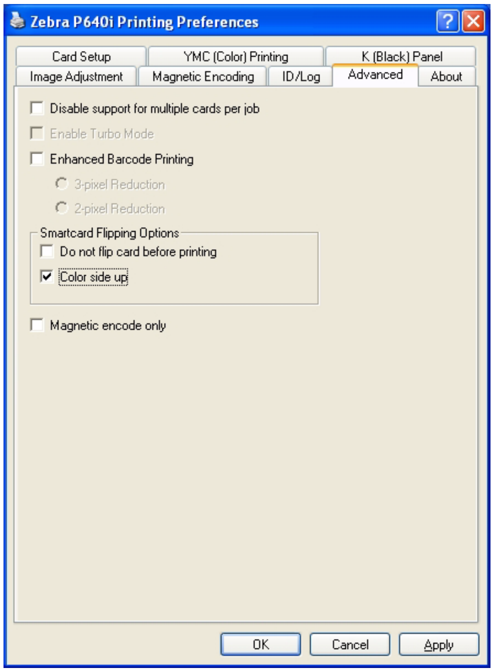
   Log File Contents selections include:

   - **Time**: Logs the time a which the card was sent to the printer in the HH:MM:SS format. The 24-hour clock is used, so 13:00 = 1:00 pm, and 05:00 = 5:00 am.
   - **Date**: Logs the date on which the card was sent to the printer in the MM/DD/YYYY format.
   - **Printer Serial Number**: Logs the serial number of the printer which printed the card.
   - **Static Text**: Adds to the record text in the box at right. Enter no more than 16 characters.
   - **IP Address**: Logs the IP address of the PC which sent the card to the printer.
   - **Magnetic Track 1, 2, 3 Data**: Logs the data sent to the printer to be encoded on the card’s magnetic stripe.
   - **EIN Data from Mag Track 2**: Logs the Embedded Inventory Number pre-encoded on Track 2. Note that EIN Readback must be enabled for this action.
   - **Application will send data with “~L=xxx” TextOut**: Allows third party applications to send data to be logged in much the same way as they would send magnetic data.
   - **Spooler Job Number**: Logs the number which the card print job was assigned in the Windows print spooler.
   - **User Name**: Logs the username of the person submitting the card print job.

## 2.8.7 Advanced Tab

The Advanced screen allows the user to Disable support for multiple cards per job, Enable Turbo Mode, and Enable Enhanced Barcode Printing (for 3-pixel or 2-pixel reduction). Other functions include Enhanced Flipping Options and Magnetic encode only.

To access the Advanced screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Printing Preferences* > *Advanced.*


Zebra P640i Printing Preferences
Card Setup
YMC (Color) Printing
K (Black) Panel
Image Adjustment
Magnetic Encoding
ID/Log
Advanced
About
OK
Cancel
Apply

☐ Disable support for multiple cards per job
☐ Enable Turbo Mode
☐ Enhanced Barcode Printing
  ○ 3-pixel Reduction
  ○ 2-pixel Reduction

Smartcard Flipping Options
☐ Do not flip card before printing
☑ Color side up

☐ Magnetic encode only

1. **Disable support for multiple cards per job -** Not used, leave unchecked.
2. **Enable Turbo Mode -** Determines how the printer buffers data, leave unchecked.
3. **Enhanced Barcode Printing -** Prints clearer barcode image by reducing blooming.

**Important •** Only use this option if you are having trouble printing barcodes. This change will be applied to all K-panel printing.

If checked, choose one of the following options:

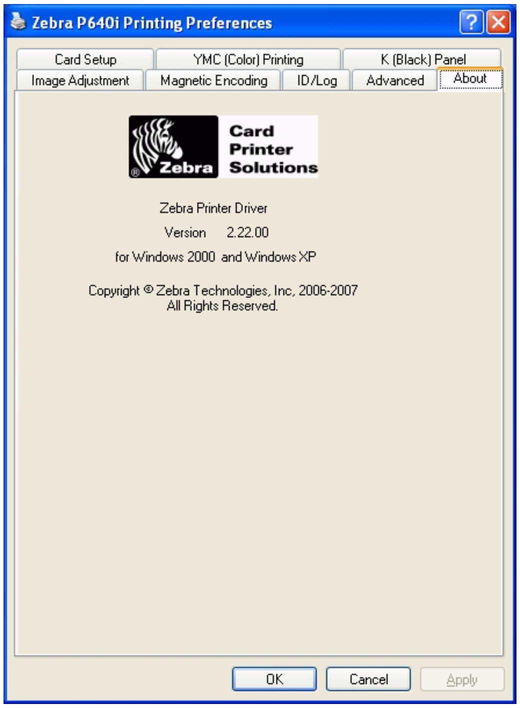
- **3-pixel Reduction -** Prints 3 out of 4 pixels.
- **2-pixel Reduction -** Prints 2 out of 3 pixels.

4. **SmartCard Fliping Options**
   - **Do not flip card before printing**
   - **Color side up**
5. **Magnetic encode only**

## 2.8.8 About Tab

The About screen displays copyright and version information about the printer driver.

To access the About screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Printing Preferences* > *About.*


Zebra P640i Printing Preferences
Card Setup
YMC (Color) Printing
K (Black) Panel
Image Adjustment
Magnetic Encoding
ID/Log
Advanced
About
Zebra
Card Printer Solutions
OK
Cancel
Apply

Zebra Printer Driver
Version 2.22.00
for Windows 2000 and Windows XP

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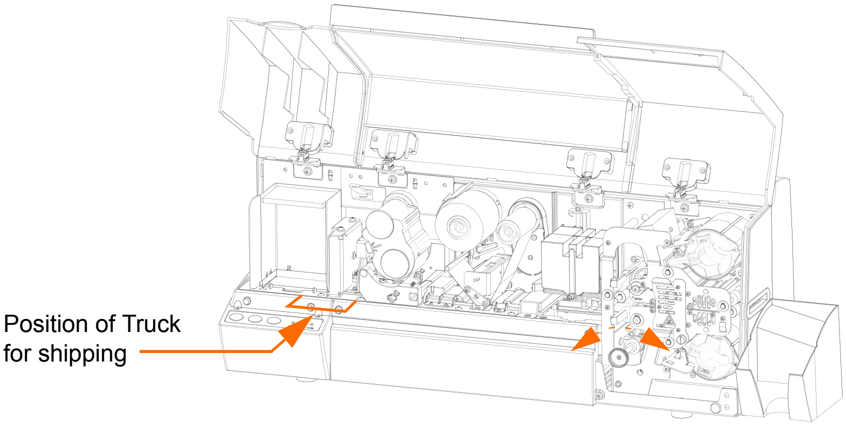
All Rights Reserved.

## 2.9 Packing the Printer for Shipment

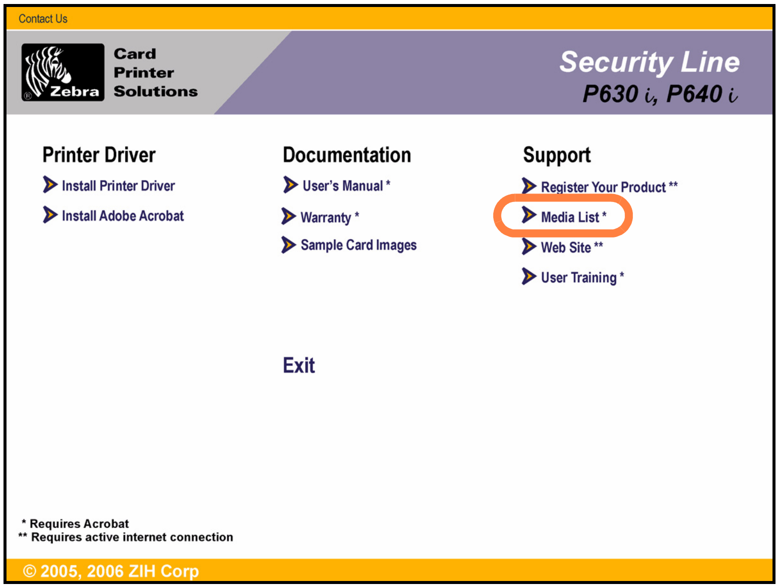
If the printer is to be shipped, use the original printer packing and shipping material for shipping the printer only. It is important to use the original packing and shipping material to prevent damage to the printer.

**Important** • Do *not* ship the printer with the Hopper Weight, the Ribbon, or the Cards in the printer.

**Important** • Ship the printer with the Truck (card carrier) positioned as indicated below. Rotate the Card Transport Knob to move the Truck.


Position of Truck
for shipping

If the original material is lost or damaged, a replacement Shipping Kit can be ordered from Zebra; please refer to the Media List on the Windows Drivers and User Documentation CD supplied with this printer.


Contact Us
Card
Printer
Solutions
Zebra
Security Line
P630 i, P640 i
Printer Driver
Install Printer Driver
Install Adobe Acrobat
Documentation
User's Manual *
Warranty *
Sample Card Images
Support
Register Your Product **
Media List *
Web Site **
User Training *
Exit
* Requires Acrobat
** Requires active internet connection
© 2005, 2006 ZIH Corp

*Worldwide Support* locations are listed in Appendix H.

# 3

# Theory of Operation

## 3.1 Introduction

This section includes five major topics:

Card Printing Basics . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 92
Sensors and Interlock Switches. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 96
Card Movement During Printing . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 97
Block Diagram . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 99
CPU PCBA Connections. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 100

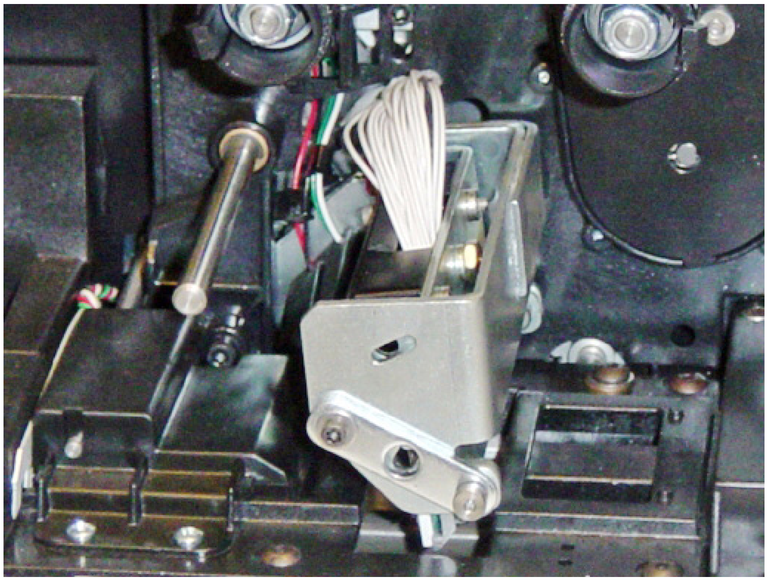
# 3.2 Card Printing Basics

This section provides an overview description of how images are printed on plastic cards.

## 3.2.1 Printhead

The Printhead Assembly mounts in the Printhead Bracket, which holds the Printhead at a right angle to the card's long surface.

The Printhead is a thin-film device that consists of a row of individually addressable heating elements. Each heating element is approximately 0.0033 inch (0.08 mm) wide, giving a print resolution of 300 dots per inch.



There are a total of 672 heating elements. Since the width of the plastic card is 2.125 inches (54 mm), 638 elements provide full-width coverage.

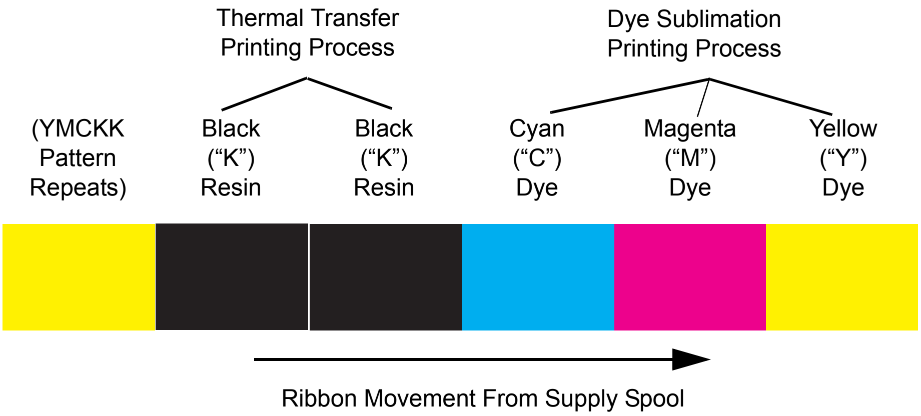
## 3.2.2 Printing Technologies and Ribbons

There are two types of printing technology used in the printer: Dye Sublimation and Thermal Transfer. The technology to use is determined by the type of dye or ink on the ribbon.

Monochrome Ribbons have a single color ink on the length of the ribbon. The printer is programmed to use Thermal Transfer printing for monochrome ribbons. Multi-Panel Ribbons have a repeating sequence of panels of different dye. RFID Multi-Panel Ribbons have an RFID tag on the supply spool; the RFID code identifies the ribbon type and panel count. (Note that the lack of an RFID tag will be interpreted by the printer as being a Monochrome Ribbon.) Printing with a Multi-Panel Ribbon requires multiple passes of the card under the Print Head, once per panel.

For dual-sided printing, a typical situation would be to print a full-color graphic (such as a person's picture) along with black text and/or bar-coding on the front, and black text and/or bar-coding on the rear. In this case, a YMCKK Multi-Panel Ribbon would be used. A YMCKK ribbon has successive panels as follows:

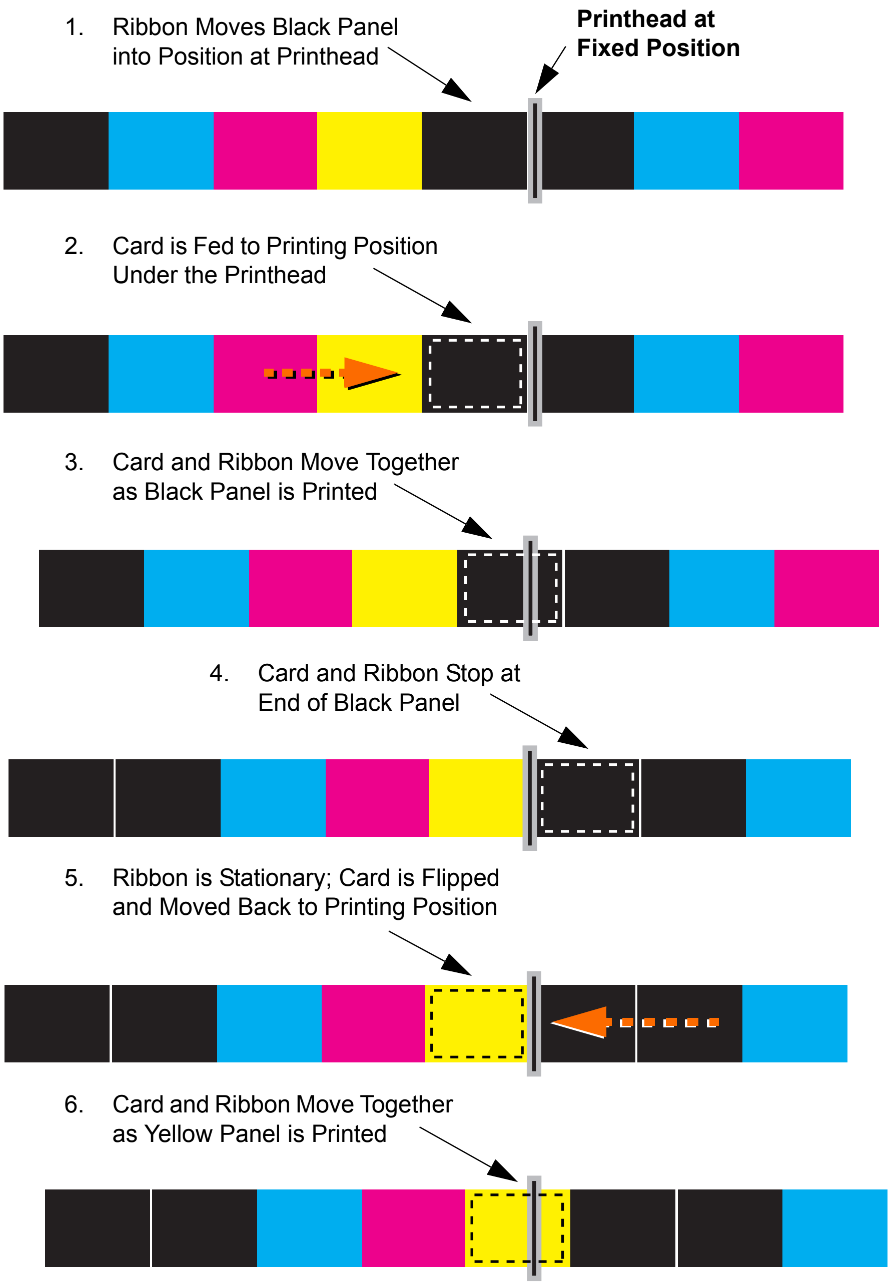
| Color | Technology | Function / Usage |
|---|---|---|
| Yellow (“Y”) | Dye Sublimation | Full-Color Printing and Dye Sublimation Black Printing |
| Magenta (“M”) | Dye Sublimation | Full-Color Printing and Dye Sublimation Black Printing |
| Cyan (“C”) | Dye Sublimation | Full-Color Printing and Dye Sublimation Black Printing |
| Black Resin (“K”) | Thermal Transfer | K Resin Black Printing (for the front of the card) |
| Black Resin (“K”) | Thermal Transfer | K Resin Black Printing (for the back of the card) |



Other ribbons are available for the printer; see the Supplies List on the Driver and Documentation CD that came with your printer, or go to the Zebra Card Printer Solutions website at www.zebracard.com.

The ribbon synchronizes to it's "starting" position whenever the Main Cover is opened and then closed. For a YMCKK ribbon, the starting position is with the leading edge of a Black Panel at the Printhead location.

The figure below shows how the YMCKK ribbon and card move relative to each other during printing.


1. Ribbon Moves Black Panel into Position at Printhead
Printhead at Fixed Position
2. Card is Fed to Printing Position Under the Printhead
3. Card and Ribbon Move Together as Black Panel is Printed
4. Card and Ribbon Stop at End of Black Panel
5. Ribbon is Stationary; Card is Flipped and Moved Back to Printing Position
6. Card and Ribbon Move Together as Yellow Panel is Printed

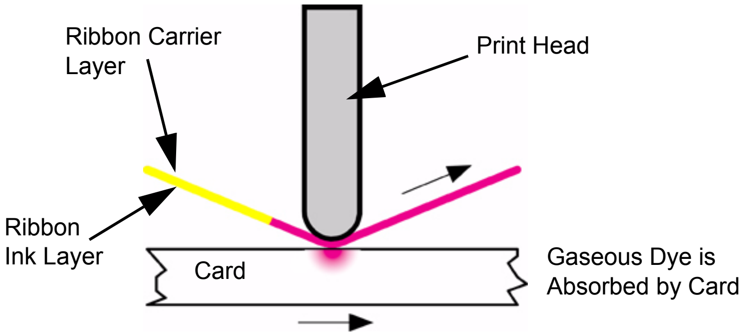
In addition, the driver software allows the user to specify which ribbon panels are printed on either side of the card.

## Dye Sublimation Printing

In Dye Sublimation Printing, each Printhead heating element is applied voltage at one of a number of pulse widths.

A wider pulse results in the element getting hotter, which converts more of the dye (at that pixel location) to a gas and diffuses it into the surface of the card (a wider pulse gives more intense color at that pixel).

This is repeated for each of the dye panels (i.e., Yellow, Magenta, and Cyan), to result in full-color images.

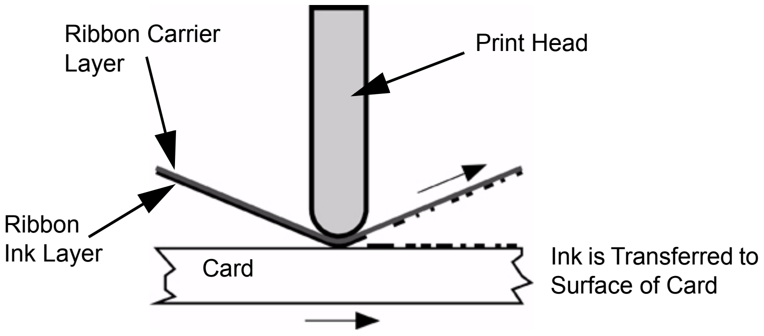

Ribbon Carrier Layer
Print Head
Ribbon Ink Layer
Card
Gaseous Dye is Absorbed by Card

## Thermal Transfer Printing

In Thermal Transfer Printing, voltage is either applied or not applied to each Printhead printing element. If voltage is applied, the ink at that location is transferred to the surface of the card.

Each pixel is either printed (i.e., the ink transferred to the card) or not; there are no intermediate levels.

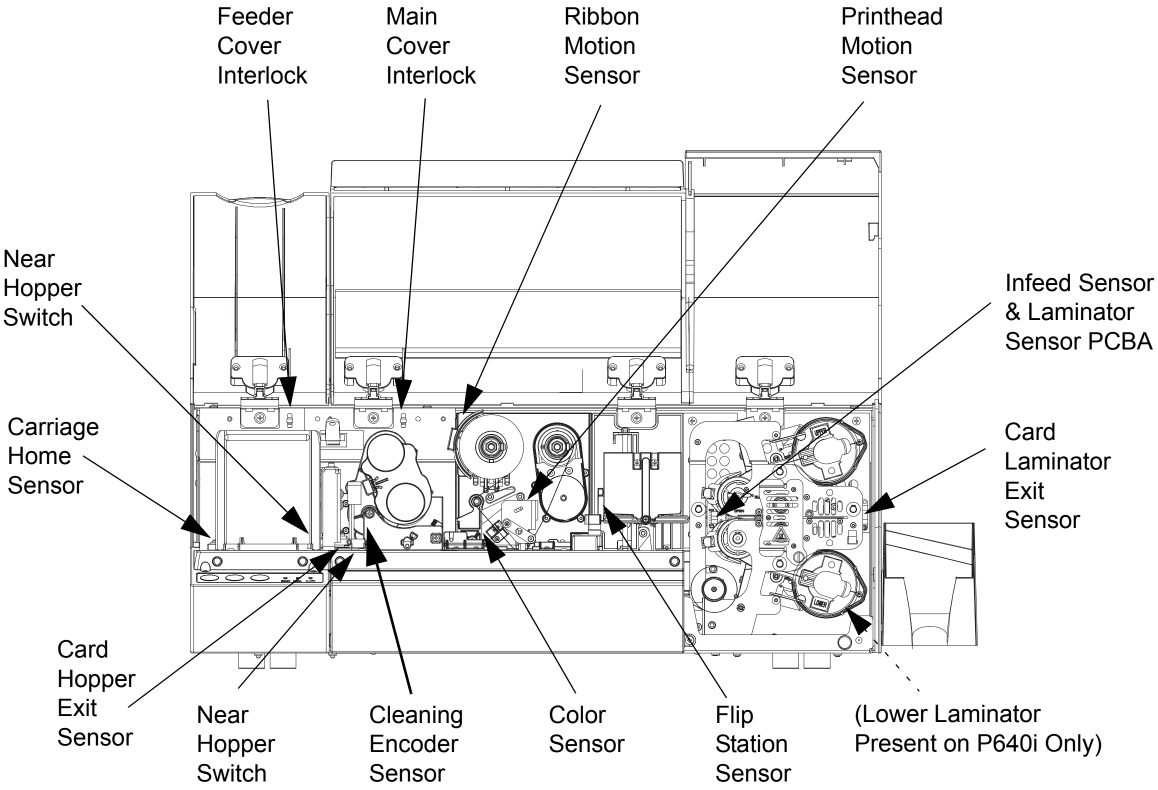
Thermal Transfer printing with a resin ribbon is used for printing bar codes, since contrast between the light and dark areas is the highest and the edges are the sharpest.


Ribbon Carrier Layer
Print Head
Ribbon Ink Layer
Card
Ink is Transferred to Surface of Card

## 3.3 Sensors and Interlock Switches

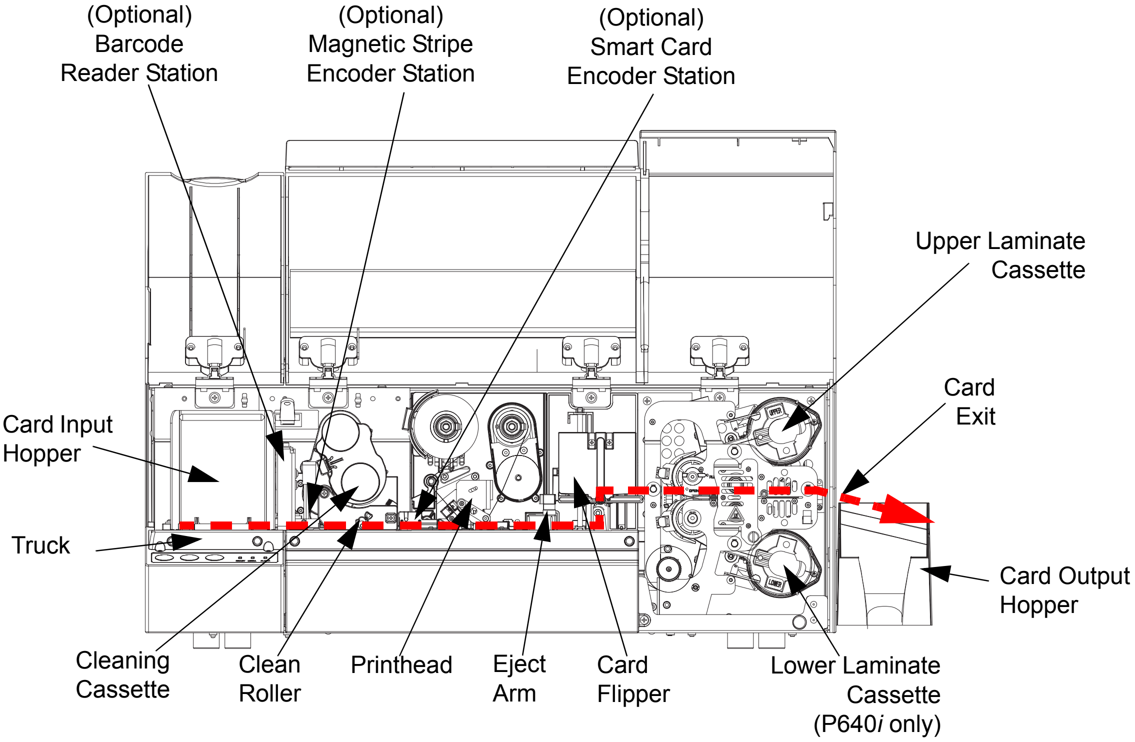
These are of several different types of sensors and interlock switches, but they have one thing in common - they tell the printer's control logic what's happening and where, enabling it to continue with the process or, if a malfunction occurs, to light the appropriate indicator light and report a specific error condition on the host computer screen.

The figure below shows the *relative* locations of the sensors that track card and ribbon position and movement.


Feeder Cover Interlock
Main Cover Interlock
Ribbon Motion Sensor
Printhead Motion Sensor
Near Hopper Switch
Infeed Sensor & Laminator Sensor PCBA
Carriage Home Sensor
Card Laminator Exit Sensor
Card Hopper Exit Sensor
Near Hopper Switch
Cleaning Encoder Sensor
Color Sensor
Flip Station Sensor
(Lower Laminator Present on P640i Only)

## 3.4 Card Movement During Printing

The printer moves a card through a specific sequence of movements as it encodes and prints the card. This example describes dual-sided printing with a YMCKK ribbon.


(Optional) Barcode Reader Station
(Optional) Magnetic Stripe Encoder Station
(Optional) Smart Card Encoder Station
Upper Laminate Cassette
Card Exit
Card Input Hopper
Truck
Card Output Hopper
Cleaning Cassette
Clean Roller
Printhead
Eject Arm
Card Flipper
Lower Laminate Cassette (P640*i* only)

- The card is fed onto the Truck from the bottom of the stack in the Card Input Hopper.

**Note •** It is not possible to install both a Barcode Reader and a Magnetic Stripe Encoder because the two devices occupy overlapping physical spaces and use similar Windows driver functions.

- If the printer includes an optional Barcode Reader Station, the card is moved to the Station; and the code is read.
- If the printer includes an optional Magnetic Stripe Encoder Station, the card is moved to the Station; and the stripe is encoded.

  The card is then backed up and run through the Magnetic Encoder again; on this pass the card is read to verify that the magnetic stripe was properly encoded.

  If encoding fails the card is moved directly to the Card Exit and into the Card Output Hopper. This is done to avoid wasting time and ribbon panels on a defective card.

- The card is moved along with it’s back side in contact with the exposed sticky area of the Clean Roller; this cleans dust or dirt particles from the upper card surface.
- The card is moved to just before the Printhead.

- The last time the Main Cover was opened and closed, the ribbon was automatically “synchronized,” thereby bringing the leading edge of the Black (K) ribbon panel under the Printhead.

- The leading edge of the card is moved under the Printhead, the Printhead is lowered, and printing begins.

- After this Black pass is completed, the Printhead is raised; and the card is moved to the Card Flipper. The card is turned over and is moved back through the printer so the other side of the card can be cleaned.

- If the printer includes an optional Smart Card Encoder Station, the card is moved to the Station and encoded.

  As the card is encoded, it is checked to verify that it was encoded properly.

  If encoding fails, the card is moved past the Printhead directly to the Card Exit and into the Card Output Hopper. As for a failed Magnetic Stripe Encoding, this is done to avoid wasting time and ribbon panels on a defective card.

- The leading edge of the card is moved under the Printhead, and the Printhead is lowered.

- Printing continues with the Yellow (Y) ribbon panel, the Magenta (M) panel, the Cyan (C) panel, and the Black (K) panel.

- When printing is completed, the card is moved to the Card Flipper, raised, and pushed by the Eject Arm into the Laminator.

- As the card passes through the Laminator, the upper and lower Transfer Rollers apply a patch of laminating film to the card. At the same time, laminating film is measured, cut, and rolled onto the Transfer Rollers for the next card.

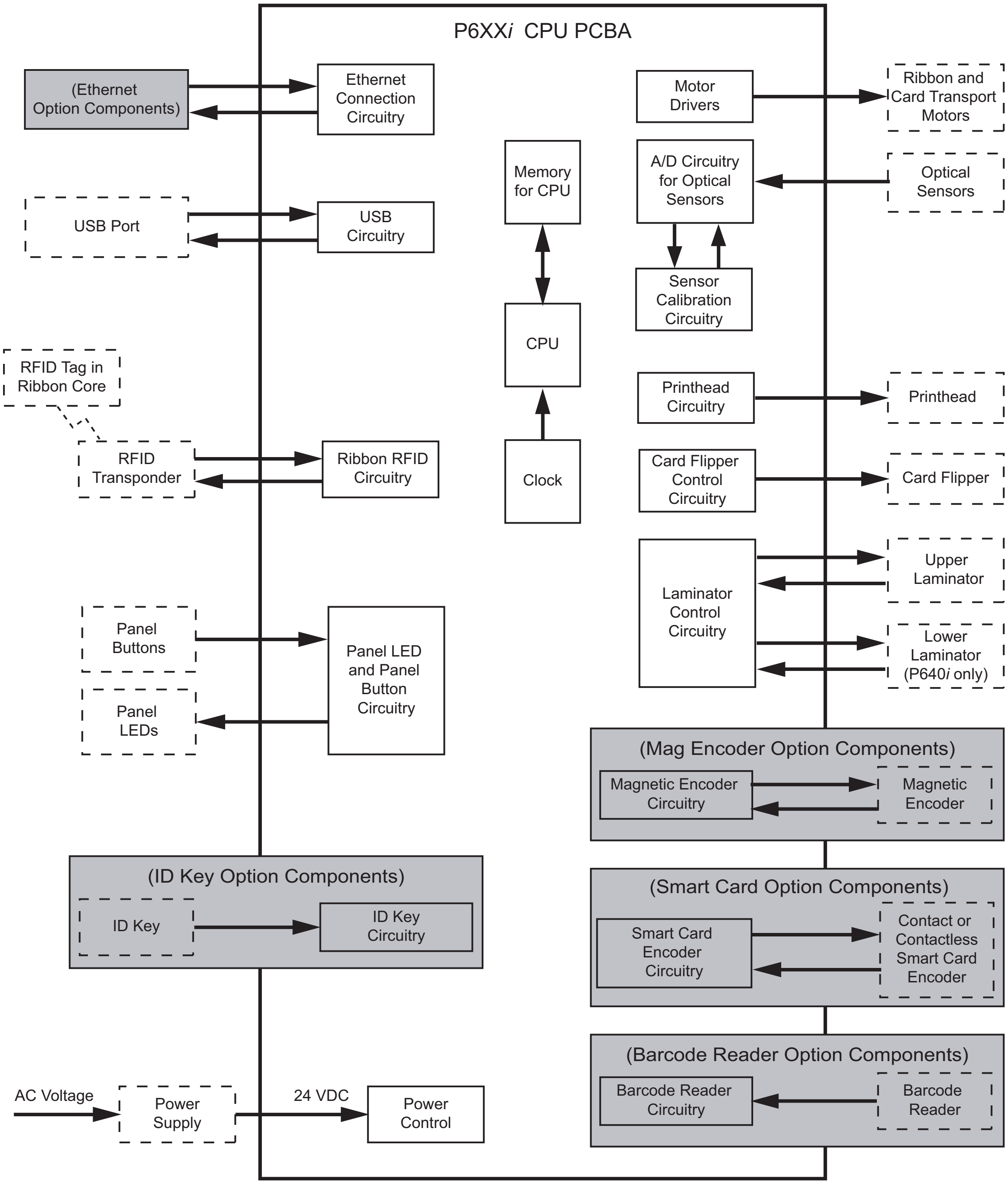
- The card (with the patch of laminating film) then passes between a pair of heated rollers, which seals the laminating film to the card.

- The card is moved from the Laminator to the Card Exit, where it falls into the Card Output Hopper.

## 3.5 Block Diagram

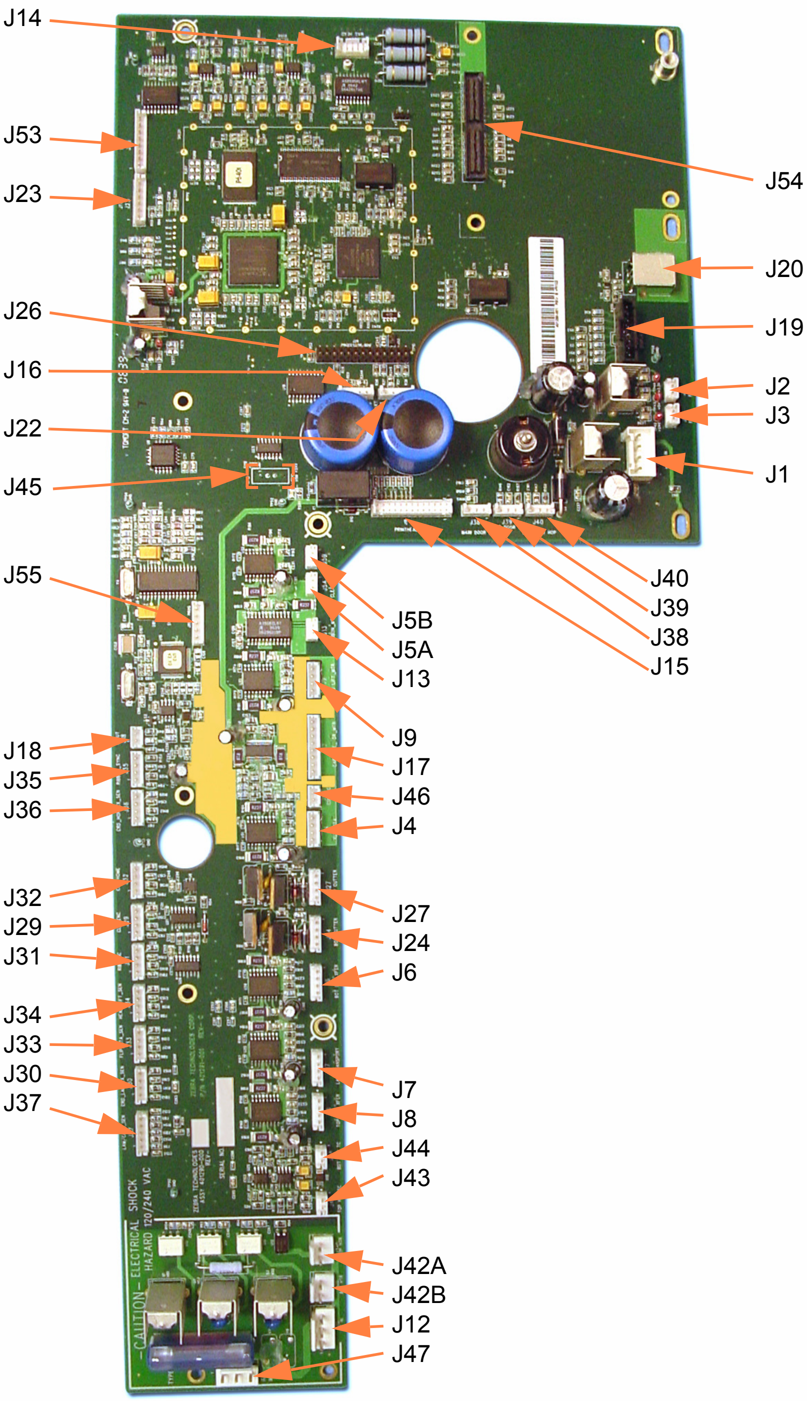
Most of the circuitry in the printer is on the CPU PCBA. Since the CPU PCBA is not a serviceable unit, circuit analysis to the component level is pointless.

Below is a block diagram of the functional circuits of the printer; the block diagram also shows how signals are passed to and from the CPU PCBA to the rest of the printer.


P6XX*i* CPU PCBA
(Ethernet Option Components)
Ethernet Connection Circuitry
USB Port
USB Circuitry
RFID Tag in Ribbon Core
RFID Transponder
Ribbon RFID Circuitry
Panel Buttons
Panel LEDs
Panel LED and Panel Button Circuitry
Memory for CPU
CPU
Clock
Motor Drivers
Ribbon and Card Transport Motors
A/D Circuitry for Optical Sensors
Optical Sensors
Sensor Calibration Circuitry
Printhead Circuitry
Printhead
Card Flipper Control Circuitry
Card Flipper
Laminator Control Circuitry
Upper Laminator
Lower Laminator (P640*i* only)
(Mag Encoder Option Components)
Magnetic Encoder Circuitry
Magnetic Encoder
(ID Key Option Components)
ID Key
ID Key Circuitry
(Smart Card Option Components)
Smart Card Encoder Circuitry
Contact or Contactless Smart Card Encoder
(Barcode Reader Option Components)
Barcode Reader Circuitry
Barcode Reader
AC Voltage
Power Supply
24 VDC
Power Control

## 3.6 CPU PCBA Connections

Most of the circuitry in the printer is on the CPU PCBA. Since the CPU PCBA is not a serviceable unit, circuit analysis to the component level is pointless; but a basic understanding of how the CPU PCBA connects to the rest of the printer helps to better understand the printer.


J14
J53
J23
J26
J16
J22
J45
J55
J18
J35
J36
J32
J29
J31
J34
J33
J30
J37
J54
J20
J19
J2
J3
J1
J40
J39
J38
J15
J5B
J5A
J13
J9
J17
J46
J4
J27
J24
J6
J7
J8
J44
J43
J42A
J42B
J12
J47

## CPU PCBA Connections

| Connector | PCBA ID | Cable ID Tag |
|---|---|---|
| J1 | +24V IN | 24V POWER |
| J2 | FAN | FAN |
| J3 | FAN | FAN |
| J4 | FLIP STA | FLIP STATION |
| J5A | CLEAN_MTR | CLEAN MOTOR |
| J5B | (no ident) | ( Contact Smart Card Option ) |
| J6 | BOT LAM XFER | BOT LAM |
| J7 | LAM TRANSPORT | LAM CARD TRANSFER |
| J8 | TOP LAM XFER | TOP LAM |
| J9 | HEAD LIFT_MTR | HEAD LIFT |
| J12 | AC IN | AC IN |
| J13 | RIBBON_MTR | PRINT RIBBON |
| J14 | MAG HEAD | ( Magnetic Encoder Option ) |
| J15 | PRINTHEAD | PRINT HEAD |
| J16 | UART | ( Contact Smart Card Option ) |
| J17 | CARRIAGE_DR_MTR | CARD TRANS / CARRIAGE MTR |
| J18 | I-BUT | ( ID Key Security Option ) |
| J19 | DISPLAY | CONTROL PAD |
| J20 | USB | ( USB Connector ) |
| J22 | UART | ( Barcode Reader Option ) |
| J23 | JTAG | ( Test Connector ) |
| J24 | BOT CUTTER | BOTTOM |
| J26 | PROCESSOR BDM | ( Test Connector ) |
| J27 | TOP CUTTER | TOP |
| J29 | CLN_ENC | CLEAN ENCODER |
| J30 | CRD_LAM_EX_SEN | LAM CARD EXIT |
| J31 | RIB_ENC | RIBBON ENCODER |
| J32 | CAR HOME | CARRIAGE HOME |
| J33 | FLIP_STA_SEN | FLIP STATION |
| J34 | HEAD_LIFT_SEN | HEAD LIFT |
| J35 | RIBBON_SYNC | RIBBON SYNC |
| J36 | CRD_HOP_EX_SEN | CARD HPR EXIT SENSOR |
| J37 | LAM/CRD_SEN | LAM SENSOR |
| J38 | MAIN DOOR SW | DOOR OPEN |
| J39 | HOP DOOR SW | HOP OPEN |
| J40 | CAR NEAR HOP | CAR NEAR |
| J42A | TOP HTR | ( Top Heater ) |
| J42B | BOT HTR | ( Bottom Heater ) |
| J43 | TOP HTR TC | ( Top Heater ) |
| J44 | BOT HTR TC | ( Bottom Heater ) |
| J45 | RFID | (RFID Flex Cable) |
| J46 | CONTAC STA | ( Contact Station Option ) |
| J47 | AC IN | AC OUT |
| J53 | TEST | ( Test Connector ) |
| J54 | (no ident) | ( Ethernet Option ) |
| J55 | PROG | ( Test Connector ) |

# 4

# Troubleshooting

## 4.1 Introduction

The objective of troubleshooting is to relate a problem to an associated assembly or system function, in order to most efficiently isolate and repair the problem. This involves determining the failure symptom and then checking one or more possible causes of the failure.

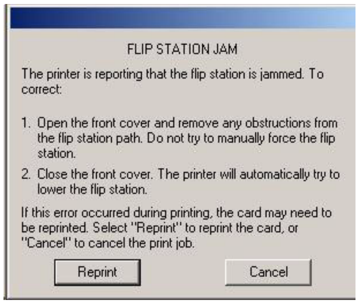
Only a symptom-related list of possibilities appears. In general, for a given failure symptom one or more possible causes are listed, with suggested corrective action to take. These causes should be checked and corrective actions taken in the order given; they are listed in order of likelihood and complexity.

When the suggestions presented fail to lead to a repair, a CPU Board replacement, if not prescribed, should nevertheless be tried. A check for broken or disconnected cables and any loss of power should also take place along with checks for obvious mechanical damage.

Zebra Card Printer Solutions offers Technical Support and factory repair as options.

# 4.2 Error Messages

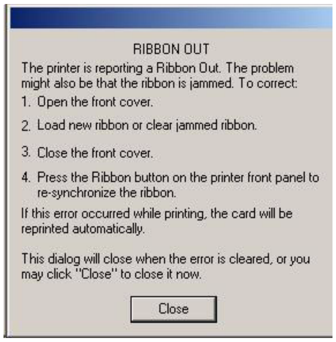
Most error conditions are identified by the printer itself and are reported by the computer as error messages, with corrective actions listed. The following are examples of computer reported error messages.


FLIP STATION JAM

The printer is reporting that the flip station is jammed. To correct:

1. Open the front cover and remove any obstructions from the flip station path. Do not try to manually force the flip station.
2. Close the front cover. The printer will automatically try to lower the flip station.

If this error occurred during printing, the card may need to be reprinted. Select "Reprint" to reprint the card, or "Cancel" to cancel the print job.

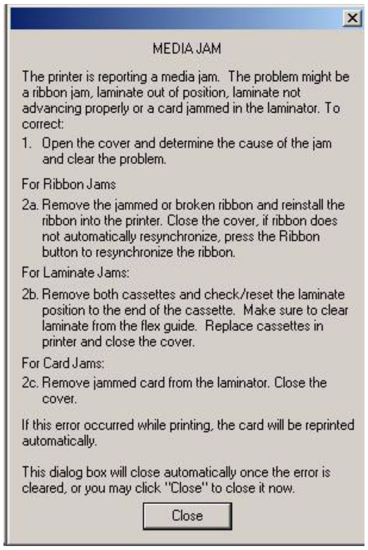

RIBBON OUT

The printer is reporting a Ribbon Out. The problem might also be that the ribbon is jammed. To correct:

1. Open the front cover.
2. Load new ribbon or clear jammed ribbon.
3. Close the front cover.
4. Press the Ribbon button on the printer front panel to re-synchronize the ribbon.

If this error occurred while printing, the card will be reprinted automatically.

This dialog will close when the error is cleared, or you may click "Close" to close it now.


MEDIA JAM

The printer is reporting a media jam. The problem might be a ribbon jam, laminate out of position, laminate not advancing properly or a card jammed in the laminator. To correct:

1. Open the cover and determine the cause of the jam and clear the problem.

For Ribbon Jams

2a. Remove the jammed or broken ribbon and reinstall the ribbon into the printer. Close the cover, if ribbon does not automatically resynchronize, press the Ribbon button to resynchronize the ribbon.

For Laminate Jams:

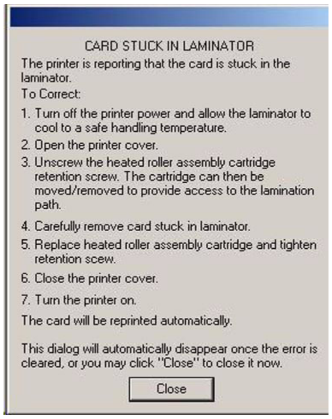
2b. Remove both cassettes and check/reset the laminate position to the end of the cassette. Make sure to clear laminate from the flex guide. Replace cassettes in printer and close the cover.

For Card Jams:

2c. Remove jammed card from the laminator. Close the cover.

If this error occurred while printing, the card will be reprinted automatically.

This dialog box will close automatically once the error is cleared, or you may click "Close" to close it now.


CARD STUCK IN LAMINATOR

The printer is reporting that the card is stuck in the laminator.
To Correct:

1. Turn off the printer power and allow the laminator to cool to a safe handling temperature.
2. Open the printer cover.
3. Unscrew the heated roller assembly cartridge retention screw. The cartridge can then be moved/removed to provide access to the lamination path.
4. Carefully remove card stuck in laminator.
5. Replace heated roller assembly cartridge and tighten retention scew.
6. Close the printer cover.
7. Turn the printer on.

The card will be reprinted automatically.

This dialog will automatically disappear once the error is cleared, or you may click "Close" to close it now.

# 4.3 Indicator Light Status

| READY | | MEDIA | ALARM | PRINTER STATUS |
|---|---|---|---|---|
| GREEN | YELLOW | ORANGE | RED | |
| ☼ | | | | Ready to print. |
| ☼●☼● | | | | Printer busy. |
| | ☼ | | | Laminator(s) in sleep mode. When not in use, the heaters cool at $1^{o}$ F per minute. |
| | ☼●☼● | | | Laminator(s) heating up, but not yet at operating temperature. |
| | | ✔ | | Normal. |
| | | ☼ | | No cards in hopper, color ribbon out, cleaning tape out, laminator cassette(s) out. |
| | | ☼●☼● | | Mag encoding write failure. |
| | | | ✔ | Normal. |
| | | | ☼ | Serious error conditions, including: Main Cover open, Laminator too hot, Card Transport stalled, card not seated properly, mag encoding verification error, head-lift failure, ribbon jam, card jam (any location), card missing (any location), no gap between laminator patches. |
| | | | ☼●☼● | Printhead temperature error, or internal firmware problem. |

✔ = LIGHT OFF

☼ = LIGHT ON

☼●☼● = LIGHT FLASHING

## 4.4 Preventive Maintenance

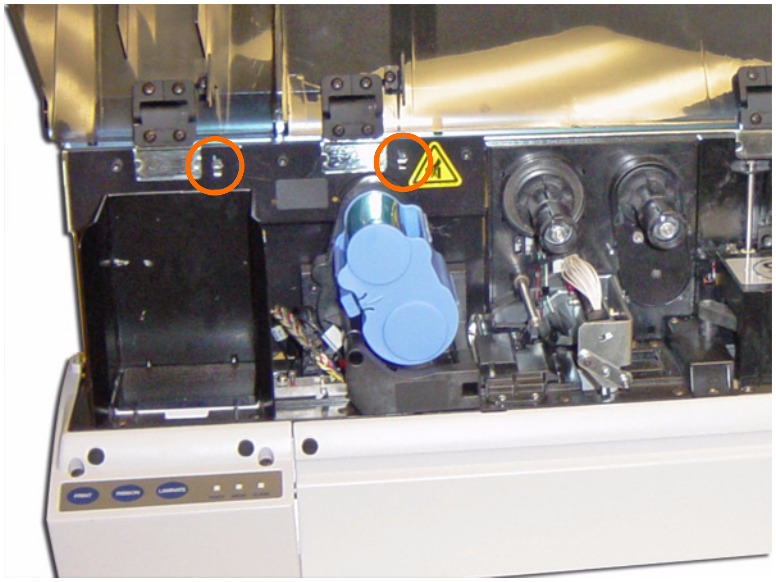
There is almost no preventive maintenance to be performed. Dust and debris should be vacuumed out every 12 months, or more frequently in adverse environments.

Most of the problems described in the following pages are correctable by the user, but please note there is the potential for unexpected results if the procedures are not followed carefully. If in doubt, call Zebra Technical Support.

Before calling for technical support, do the following:

- Check all cable connections, including power.
- Check that the power switch is ON.
- Unless you hear noises suggesting a card jam condition, try power cycling: switch OFF, wait 15 seconds, then switch ON.
- Open the Main Cover, then look for obvious problems; e.g., a card where it should not be, media outages, mis-feeds (color ribbon, laminate, cleaning cassette. etc.).

**Note •** In order to see what is happening in the printer during test (e.g., check Flip Station operation while the Feeder and Main Covers are open), override the interlocks by inserting tabs into the corresponding interlock slots.



# 4.5 Unusual Noises/Unreported Events

### Color ribbon runs for longer than 2 or 3 seconds when cover is closed (MEDIA light stays on)

- Color ribbon not in Color Sensor.
- Both ribbon cores not fully engaged on Spindles.
- Ribbon not secured to Take-up Core.

### ALARM light stays ON after error condition is cleared

**Note •** There is a delay after closing the cover before the ALARM light goes out.

- Some alarms require recycling power in order to clear.
- Main Cover interlock switch may not have actuated when cover closed.
- Alarm condition not corrected.

### YMC color panels stick to card

- Printhead running too hot. Can happen after head replacement if head resistance incorrectly entered through printer driver; see 'Printhead Adjustments' on page 132.
- Color gain and offset too high. Contact Zebra Customer Service.
- Check ribbon take-up and supply torques; see 'Ribbon Torque Adjustment' on page 126.

### Rattling noise every 10 cards

- Cleaning cassette not firmly engaged.
- Cleaning cassette broken or cassette halves separated.
- Cleaning cassette cannot rotate upward to disengage from the cleaning roller. Pivot arm screw too tight or too loose.

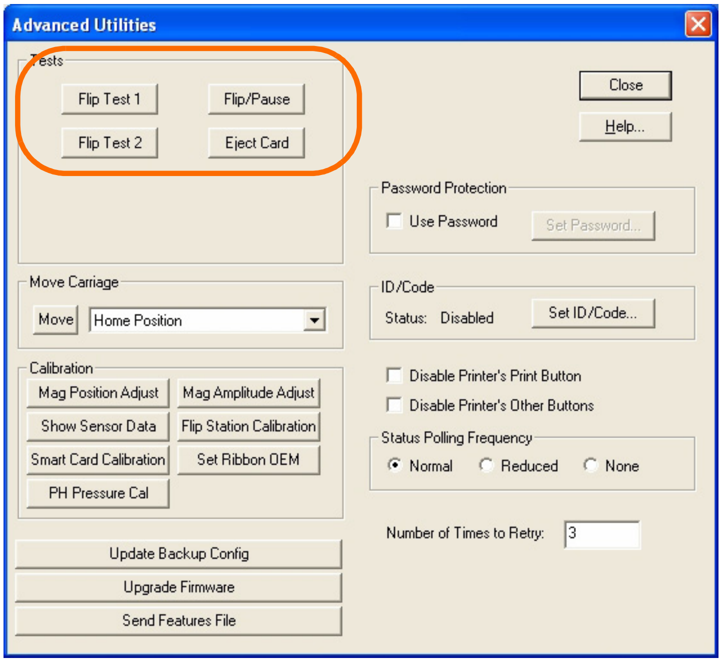
### Card has both front and back images printed on same side

- Both pages print on the same side (with YMCK). Check the ribbon settings.

  Select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Printing Preferences* > *Card Setup.*

- Card does not flip. Run the Flip Tests to check flip action.

  To run the Flip Test, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Device Settings* > *Control* > *Advanced Utilities.*


Advanced Utilities
Tests
Flip Test 1
Flip/Pause
Flip Test 2
Eject Card
Close
Help...
Move Carriage
Move
Calibration
Mag Position Adjust
Mag Amplitude Adjust
Show Sensor Data
Flip Station Calibration
Smart Card Calibration
Set Ribbon OEM
PH Pressure Cal
Update Backup Config
Upgrade Firmware
Send Features File
Password Protection
Set Password...
ID/Code
Set ID/Code...
Status Polling Frequency

Move: Home Position

☐ Use Password

Status: Disabled

☐ Disable Printer's Print Button

☐ Disable Printer's Other Buttons

● Normal ○ Reduced ○ None

Number of Times to Retry: 3

To correct, refer to ‘Flip Station Adjustments’ on page 137.

### MEDIA light ON steady, but no obvious visual problem

- Color ribbon not in Color Sensor.
- Color ribbon supply and/or take-up cores not engaging properly on Spindles.
- Cleaning cassette not engaging properly on the take-up drive.
- End of patch.
- Laminate misfeed.

### Completely unexpected print results

- Color ribbon out, or nearly out. Replace ribbon.
- Main cover opened during a print job. Open and close main cover, then press RIBBON to re-sync ribbon. Reprint last job.
- Color ribbon panels out of sync, see previous action.
- Color ribbon not advancing consistently. Color ribbon supply and/or take-up cores not engaging properly on spindles.
- Front (color side) of card printed with black. Open and close main cover, then press RIBBON to re-sync ribbon.
- Inconsistent color, very faint printing. Printhead not pressing on ribbon; see 'Printhead Position (Height/Pressure) Adjustment' on page 133.
- Color ribbon torn, or jamming intermittently. Clear jam. Pull out more from supply roll, and reattach to take-up roll. Also, check 'Printhead Position (Height/Pressure) Adjustment' on page 133.

### K (Black) panel sticks to card

- Printhead running too hot. Can happen after head replacement if head resistance incorrectly entered through printer driver; see 'Printhead Adjustments' on page 132.
- Black panel density and/or preheat set too high. Contact Zebra Customer Service.
- Check ribbon take-up and supply torques; see 'Ribbon Torque Adjustment' on page 126.
- Color image printing with K (black) panel. Check selections made in Printing Preferences.

### Loud rattling/screeching from card transport

- Card has fallen onto Truck drive belt and is jammed at some point.

  **a.** Open the cover, and remove all the cards from the hopper.
  **b.** Remove the jammed card if accessible.
  **c.** Look for the card in the transport bed.
  **d.** Using the Card Transport Knob, hand-crank the Truck to push the card into one of two areas for easy removal - under the hopper, or under the flip station (lift the carrier for access, then push it down again).

## Unusual events

In any of the following cases, and all other unusual events, try power cycling first, then investigate specific issues:

- Printhead descends before card arrives. Contact Zebra Customer Service.
- Printhead stays down after card has gone away. Contact Zebra Customer Service.
- Laminate cutter fails to operate.
- Unusual media light indications.

## Laminator spot check

**Note** • Remember, the P640*i* Printer includes upper and lower laminators; the P630*i* Printer has the upper laminator only.

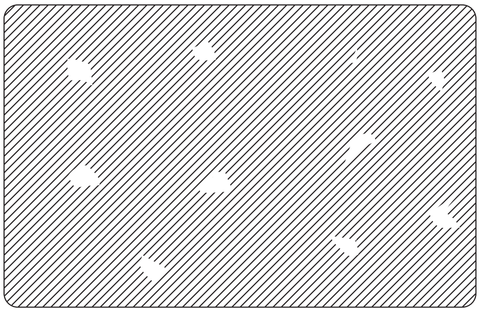
- Make sure the Transfer Toggle is in the RUN (horizontal) position.
- Upper or lower laminate feed problems: remove, then replace transfer guides, discarding laminate patches on transfer rollers. Check for laminate where it shouldn't be. Remove both laminate cassettes. If out, or nearly out, load fresh laminate. Wind laminate back in to eliminate overhang. Reinstall cassettes, latching securely. Visually check path from cassette(s) through feed roller, cutter, and transfer guide.
- Check for mis-feeding of laminate due to poor engagement of white plastic idler on cassette with drive roller. Mark the upper core to check that it rotates (no need to mark the lower core - watch the notches on the laminate core). Feed laminate by pressing the LAMINATE button.
- Laminate patch may be wrapped around the heated roller, causing card feed problems and/or poor lamination. Turn printer OFF, **remove the laminate patch immediately**. Do *not* use a metal knife or any tool that might damage the heated rollers.
- Check upper and lower laminate sensor readings, with and without laminate present (< 20 if present, > 180 if absent - numbers valid only if transfer guides installed).

## 4.6 Print Quality Problems

**Important** • The use of Zebra cards and True Colours® ribbons will give the best print quality.

This section will help you resolve print quality problems. The print quality is dependent on several factors. The two most important factors that will increase your print quality are cleanliness and card stock. To diagnose and fix print quality problems, follow the troubleshooting procedures below:

**Example** • Small spots appear on the printed card with a non-printed area or a different color.



- Possible Cause:

  Contamination on the card surface.

  Solution:

  Check that cards are stored in a dust free environment.

  Use a different supply of cards.

- Possible Cause:

  Cleaning roller not installed.

  Dust inside the printer and/or dirty cleaning roller.

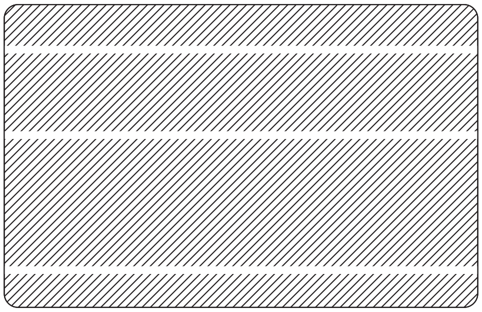
  Solution:

  Perform a cleaning of the printer.

  Check that the protective cover was removed from the ribbon cartridge cleaning roller.

  If printing one card at a time, replace the cleaning roller located at the front of the printer.

**Example** • There are non-printing horizontal lines (white) on the card surfaces.



- Possible Cause:

  Ribbon cartridge is not correctly positioned.

  Solution:

  Ensure that the ribbon is properly rolled onto the ribbon cores of the cartridge and that there are no wrinkles in the ribbon.

  Replace ribbon cassette.

- Possible Cause:

  Printhead is dirty.

  Solution:

  Clean the printhead.

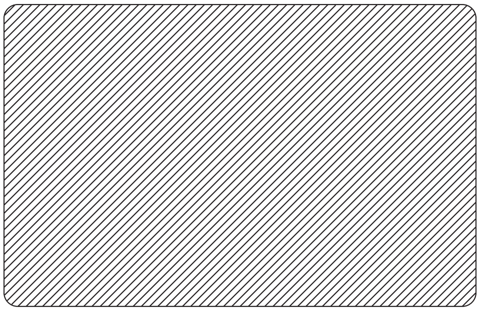
- Possible Cause:

  Printhead elements are damaged (e.g., scratched or burnt).

  Solutions:

  Replace the printhead.

**Example •** Printing shows very pale or inconsistent results.



- Possible Cause:

  Ribbon cartridge has been stored improperly or is damaged.

  Solution:

  Change the ribbon cartridge and print again.

- Possible Cause:

  Cards may not meet specifications.

  Solution:

  Use a different supply of cards.

- Possible Cause:

  Contrast and/or intensity may be set to values which are too high.

  Solution:

  Adjust contrast and/or intensity values in software.

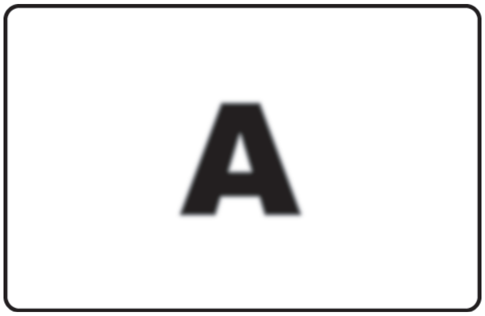
- Possible Cause:

  Dust or embedded contamination on elements of the printhead.

  Solution:

  Clean the printhead.

**Example** • Printing shows blurry printed image.



- Possible Cause:

  Ribbon cartridge may not be correctly positioned.

  Solution:

  Check that the ribbon is properly rolled onto the ribbon cores of the cartridge, with no wrinkles.

  Replace ribbon cartridge, making sure it locks in place, and print again.

- Possible Cause:

  Ribbon may not be synchronized on the correct color panel position.

  Solution:

  Open lid, then close lid to synchronize ribbon.

- Possible Cause:

  Cards may not meet specifications.

  Solution:

  Use a different supply of cards.

- Possible Cause:

  Dust or embedded contamination inside the printer and/or dirty cleaning roller.

  Solution:

  Clean the printhead.

  Replace the cleaning roller.

**Example •** No printing on the card.

- Possible Cause:

  Ribbon cartridge may not be installed in the printer.

  Solution:

  Check for ribbon cartridge in the printer.

- Possible Cause:

  Cards may not meet specifications.

  Solution:

  Use a different supply of cards.

- Possible Cause:

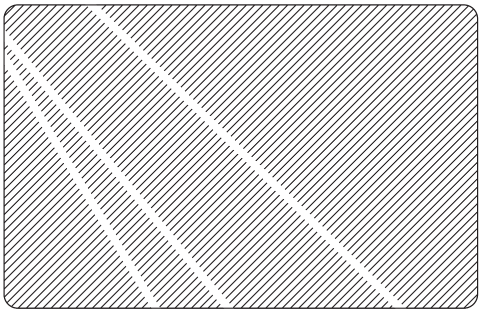
  Cable on printhead may be disconnected.

  Printhead elements may be scratched or burnt.

  Solution:

  Call Service for printhead repair or replacement information.

**Example** • Irregular white lines in the print, like the ribbon is wrinkling -- Ribbon Wrinkle.



- Possible Cause:

  Ribbon cartridge may not be correctly positioned.

  Solution:

  Check to make sure that the ribbon is loaded correctly.

- Possible Cause:

  Cards may not meet specifications.

  Solution:

  Use a different supply of cards.

- Possible Cause:

  Dirty printhead and/or print path.

  Solution:

  Clean the printhead.

  Clean the print path.

- Possible Cause:

  Worn or uneven platen roller surface.

  Solution:

  Replace the platen roller.

## Faint, non-uniform image

- Printhead pressure too low. Adjust downward; see 'Printhead Position (Height/Pressure) Adjustment' on page 133.
- Printhead not pivoting freely.

## Gaps in image at edges and corners

- Possible de-lamination/wear of Platen's rubber surface. Try cleaning Platen. If unsuccessful, replace Platen; see 'Platen' on page 177.
- Possible non-uniformity of card thickness, or card surface defects.

## Continuous white or black stripes on card's longer dimension

- Before doing anything else, clean the printing edge of the printhead; see Section 6.2.
- White stripe means blown pixel (non-functioning heating element). One or two blown pixels in isolation may be acceptable to some. Otherwise replace printhead; see 'Printhead Assembly' on page 192.
- Black stripe means non-functioning circuit(s) on printhead. If so, replace printhead; but first check that it is not the result of an image size change not followed by power cycling the printer.

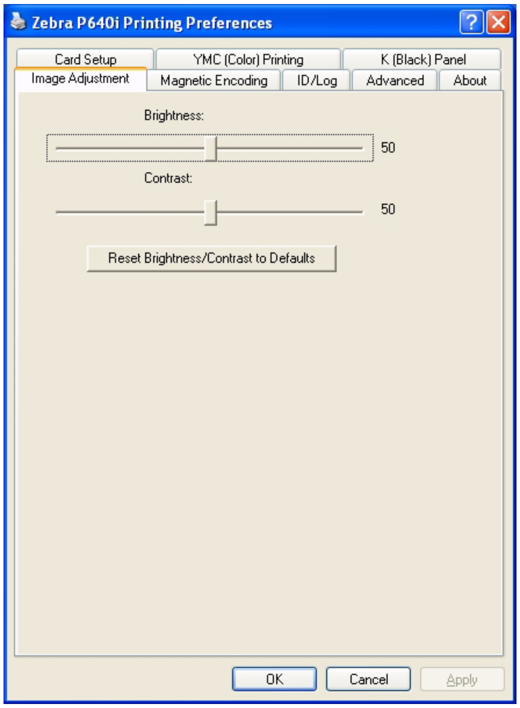
## Poor color registration

- Minor mis-registration of Y, M, and C color passes may be due to printhead angle adjust screw not in firm contact with printhead frame; 'Printhead Angle Adjustment' on page 134.
- For gross mis-registration of Y, M, and C, suspect that the card not firmly positioned against left hand pick edge of Truck on one or more passes. Spring at left end of Platen may be missing or bound up. To remove the Platen, see 'Platen' on page 177.
- Check printed card for damage on corners or edges. Example: the card may be scraping along the underside of the hopper base molding.
- Printhead pressure too light; see 'Printhead Position (Height/Pressure) Adjustment' on page 133.
- Printhead may be running hot. Will occur if head resistance incorrectly entered in driver software; see 'Printhead Adjustments' on page 132.
- Toothed transport belt pulley may be slipping on drive shaft.
- Check platen spring -- spring height should be the same as the pin height; see 'Platen' on page 177.

## Poor color rendering

**Important** • Changes in contrast settings will not take effect until power is cycled.

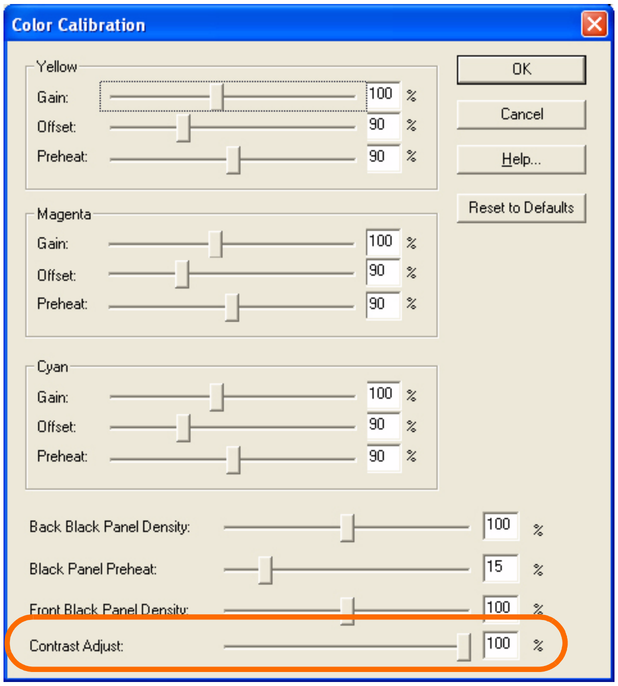
- Possible source issues - poor quality photos or graphics, card layout application settings. Isolate the problem by printing a known image.
- To vary the brightness and contrast, select *Start > Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Printing Preferences > Image Adjustment.*


Zebra P640i Printing Preferences
Card Setup
YMC (Color) Printing
K (Black) Panel
Image Adjustment
Magnetic Encoding
ID/Log
Advanced
About
Reset Brightness/Contrast to Defaults
OK
Cancel
Apply

Brightness: 50

Contrast: 50

- To adjust the contrast, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Device Settings* > *Color Calibration.*



Yellow
Gain: 100 %
Offset: 90 %
Preheat: 90 %

Magenta
Gain: 100 %
Offset: 90 %
Preheat: 90 %

Cyan
Gain: 100 %
Offset: 90 %
Preheat: 90 %

Back Black Panel Density: 100 %
Black Panel Preheat: 15 %
Front Black Panel Density: 100 %
Contrast Adjust: 100 %

# 4.7 Laminate Problems

### Laminate not centered on card

- Vertical offset adjust (mechanical adjustment); for the upper cassette, see 'Vertical Offset Adjustment (upper cassette)' on page 147; for the lower cassette, see 'Vertical Offset Adjustment (lower cassette)' on page 148.

- Horizontal offset adjust (printer properties adjustment); see 'Horizontal Offset Adjust' on page 144.

### Laminate not parallel with card edges

- Skew adjust (mechanical adjustment); for the upper cassette, see 'Skew Adjustment Procedure (upper cassette)' on page 145; for the lower cassette, see 'Skew Adjustment Procedure (lower cassette)' on page 146.

- If using partial width laminate, edge guide not properly installed (one of two positions).

- Transfer guide not properly installed.

- Laminate patch wrapped around heated roller.

### Laminate wrinkling

- Can occur at end of roll. Remove cassette. If nearly out, discard. Install fresh roll.

- If not end-of-roll problem, suspect obstructions in laminate feed path.

### Laminate bunches up outside the cutter assembly

This can happen to either upper or lower laminates.

- Failing to latch the cassette. Unlatch the cassette, gently wiggle the cassette out of its pocket, then latch the cassette.

- Out-of-square scissor cut on the leading edge of the laminate. You can make this easier by cutting the laminate above the latch. Remove all laminate scraps.

- Leading edge of laminate not reeled in even with the lips of the cassette. Cut the leading edge of the fresh laminate as square as you can with scissors, then reel it in, re-install, and latch the cassette.

**Note •** Any time you unlatch a cassette, you must check that the laminate is even with the lips of the cassette before re-latching.

### Card jammed in laminator

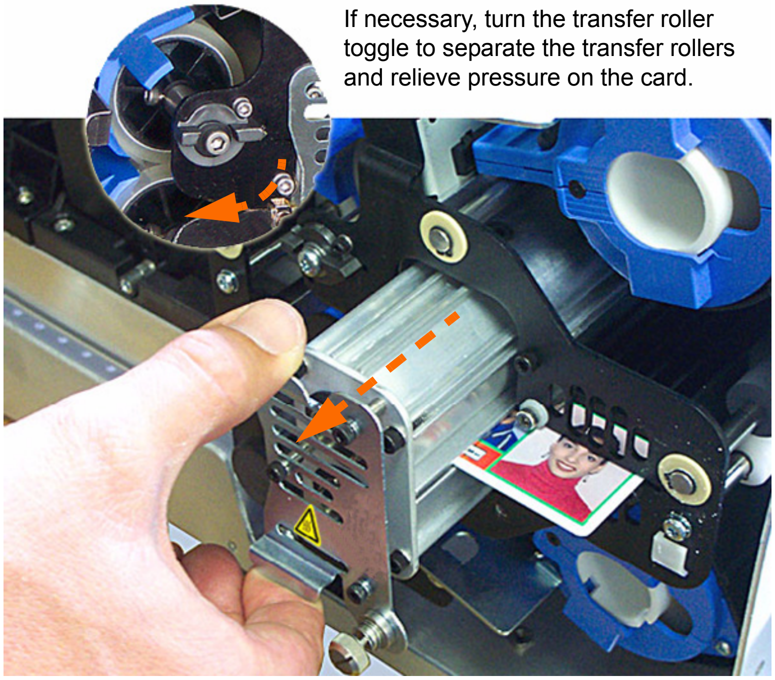
- Dings or rough edges on the card (depending on vendor, card quality can vary, even from batch to batch).
- Either of the cutters fails to cut, so the card is stopped dead by a “tail” of laminate, now firmly held by the laminate feed roller, which can *not* be rotated by tugging on the laminate.

**Note •** All rollers in the main drive train of the laminator (not the cassette out-feeds) are connected by toothed belts. If any of them fails to rotate, suspect loose set screws on the toothed pulleys.

- Heated Rollers, Infeed Rollers, Or Outfeed Rollers not rotating.

*Corrective Action:*

**Step 1.** Turn off the printer; allow it to cool for about 10 minutes.



If necessary, turn the transfer roller toggle to separate the transfer rollers and relieve pressure on the card.

---

**Hot Surface •** Even after allowing cooling time, the assembly will be HOT, so hold it only by its outer cover.

---

**Step 2.** Unscrew the heater assembly fastener, then partially withdraw the assembly with the card.

**Step 3.** Pull the card out of the heater, inspect the rollers for laminate scraps and foreign matter, then re-install the assembly. Do *not* use metal tools to clean the rollers.

# 4.8 Printhead Problems

### White line across length of the card

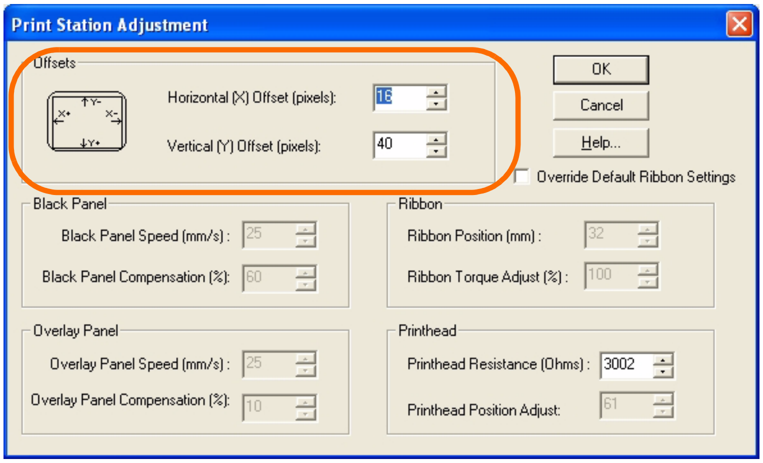
- The white line is a sign of a blown pixel.
- The adjacent black stripe is a printhead driver problem (i.e., components on the head itself).
- These are independent problems, not necessarily co-located, that may require replacement of the printhead.

### Random occurrences of white (un-printed) spots

- Possible card quality problem. Run IDPrint Lite with graytone.bmp on cards from a different batch. Check Platen surface for specks of debris.

### Image not centered on card

- To adjust the horizontal/vertical offset, select *Start > Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties > Device Settings > Printer Adjustment > Print Station Adjust...*



Horizontal (X) Offset (pixels): 16

Vertical (Y) Offset (pixels): 40

☐ Override Default Ribbon Settings

Black Panel Speed (mm/s) : 25

Black Panel Compensation (%): 60

Ribbon Position (mm) : 32

Ribbon Torque Adjust (%) : 100

Overlay Panel Speed (mm/s) : 25

Overlay Panel Compensation (%): 10

Printhead Resistance (Ohms) : 3002

Printhead Position Adjust: 61

### Image offset on card

- Correct this by increasing horizontal (X) offset, decreasing vertical (Y) offset.

### Image loss at top of card (on either edge)

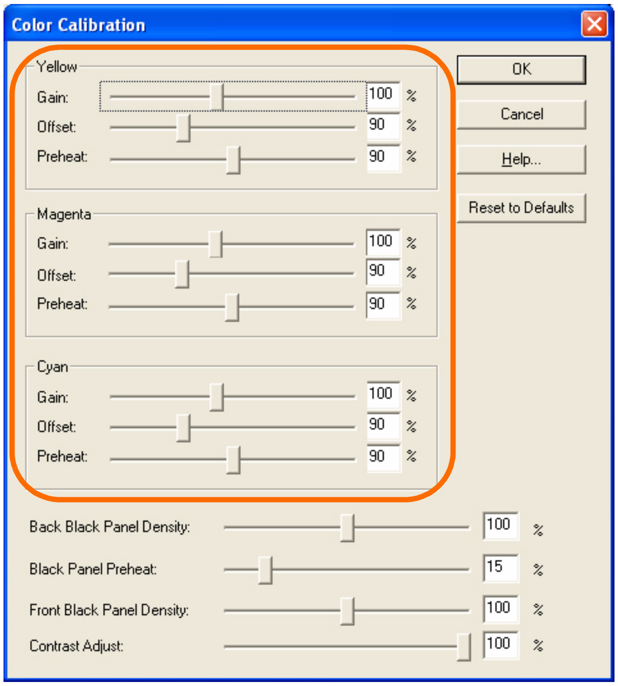
- Almost certainly due to ribbon fold-over.
- Could be head non-pivoting problem. Contact Zebra Customer Service.
- Could be image size problem; resize image.

## Random colored patterns on image

- Ribbon wrinkling. Reduce take-up torque; see ‘Ribbon Torque Adjustment’ on page 126. Check printhead pressure/height; see ‘Printhead Position (Height/Pressure) Adjustment’ on page 133.

- Too much heat being applied to YMC panels. Try reducing gain, offset, and preheat separately for each color in the driver.

  Select *Start > Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties > Device Settings > Color Calibration.*



Yellow
Gain: 100 %
Offset: 90 %
Preheat: 90 %

Magenta
Gain: 100 %
Offset: 90 %
Preheat: 90 %

Cyan
Gain: 100 %
Offset: 90 %
Preheat: 90 %

Back Black Panel Density: 100 %
Black Panel Preheat: 15 %
Front Black Panel Density: 100 %
Contrast Adjust: 100 %

- Printhead running too hot. Can happen after head replacement if the head resistance is incorrectly entered via the printer driver; see ‘Printhead Adjustments’ on page 132.

## Random colored lines

- Probably resulting from excessive take-up torque; see ‘Ribbon Torque Adjustment’ on page 126.

## Scratches/dings on long edges of card

- Look for a narrow band of abrasion up to about 0.1" (2.5 mm) in from either or both of the long edges. Contact Zebra Customer Service.

- Card hopper base set too low. Contact Zebra Customer Service.

### Image missing at top or bottom of card

- Ribbon folded over at edge. Slacken ribbon by pulling more out of supply roll, unfold edge then press RIBBON button to re-sync.
- Bottom edge and/or right hand edge of image missing could be card layout application sending wrong image size (should be 952 x 578 pixels). Select appropriate image size (if available) in Preferences, or modify layout application.

### Image skewed

- Printhead needs skew adjustment; see 'Image Skew Adjustment' on page 135.

### Consistent image defects, card after card

- Debris on Platen, or Platen surface not flat. Clean Platen, or replace if necessary.

### Debris on Platen

- Clean Platen.

## 4.9 System Related Issues

- Printer self-test takes more than a few minutes to complete
- READY indicator LED is not lit on the panel
- A communications problem exists

### Invalid IP address

A valid static unique IP address must be assigned to the printer. The default setting has DHCP disabled. If you do not specify either, the printer may incur an extended latency while being identified in your network. Refer to your operating system networking configuration instructions to set up a unique static or DHCP selected IP address for your Ethernet-enabled printer.

### DHCP is enabled but the printer is not connected to your network

Verify that the Ethernet cable is properly connected to the printer and to the Ethernet port on your computer or the network.

### Valid host name has not been assigned to the printer

If your client uses Windows 2000, a valid host name must be assigned to the printer. Failing to do so may cause DHCP to register the IP address as the printer name in DDNS for clients that do not support dynamic updates.

### Color differences may be attributable to the Windows operating system installed

In a multi-printer installation, the colors printed on one unit do not match the colors from another, even though the printer color settings are the same.

To ensure color consistency, it is recommended that the identical operating system and settings be used on all computers generating print jobs.

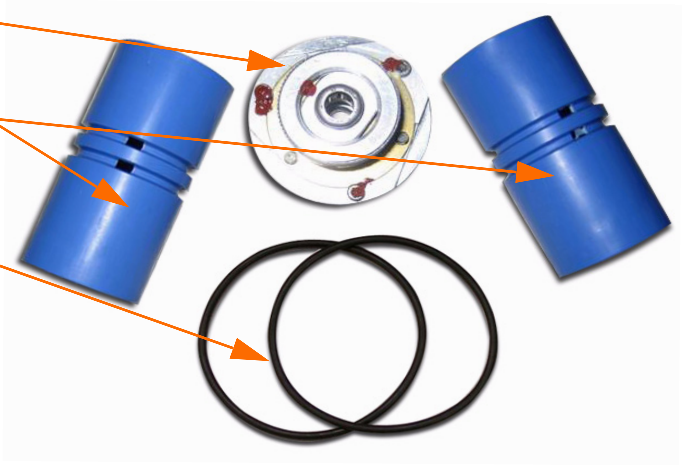
# 4.10 Adjustment Procedures

## 4.10.1 Ribbon Torque Adjustment

To perform the procedure ensure you have a Clutch Burn-In Tool Kit, a 7/16” nut driver, and the **IDPrint** test and adjustment program.

The Clutch Burn-In Tool Kit, P/N: 105927-430, consists of:

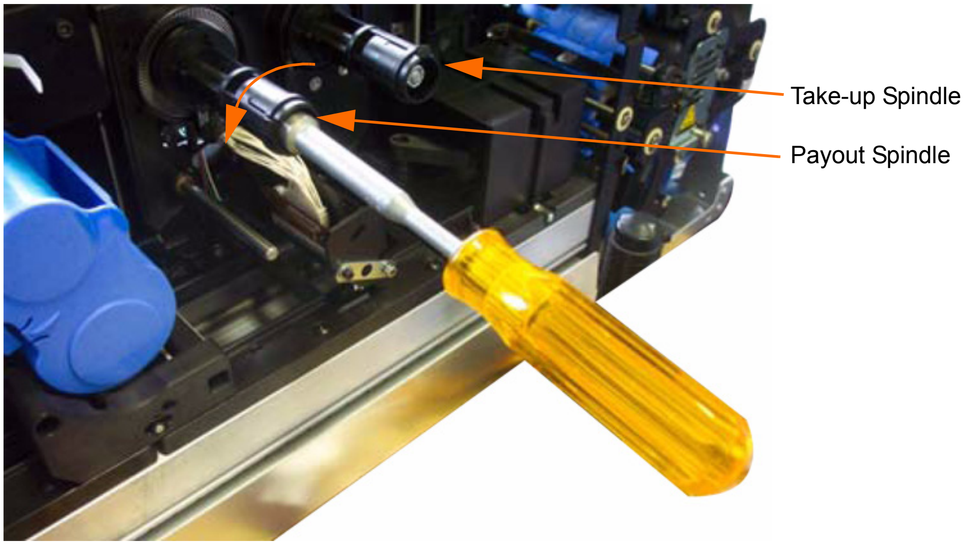
- Clutch Pulley Assembly
- Grooved Splined Cores (2)
- O-rings (2)



**Step 1.** Find Low Ribbon Torque.

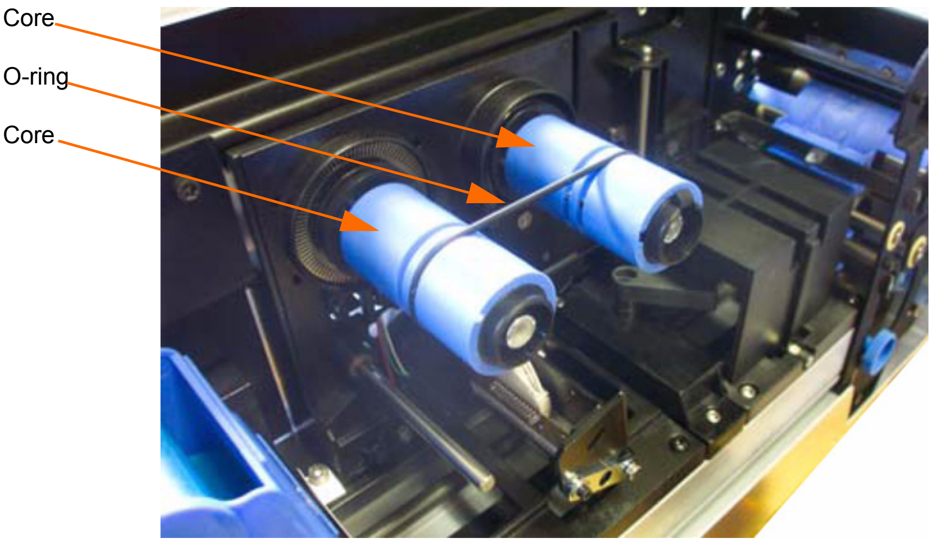
**e.** Plug in and power up the printer

**f.** Ensure the Payout Spindle rotates freely.



**g.** Ensure that there is very little end-to-end play (detent) in the Take-up Spindle; adjust the take-up spindle nut as required.

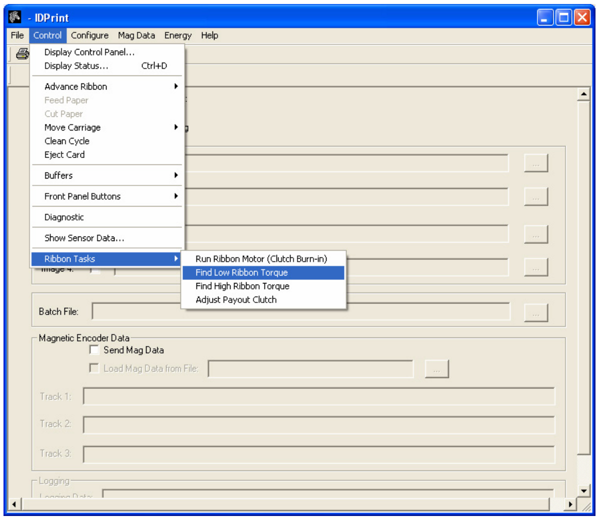
**h.** Install the two Grooved Splined Cores.


Core
O-ring
Core

**i.** Install the one of the O-ring in the front slots on the two cores.

**j.** Start IDPrint.

**k.** Select *Control* > *Ribbon Tasks* > *Find Low Ribbon Torque*:

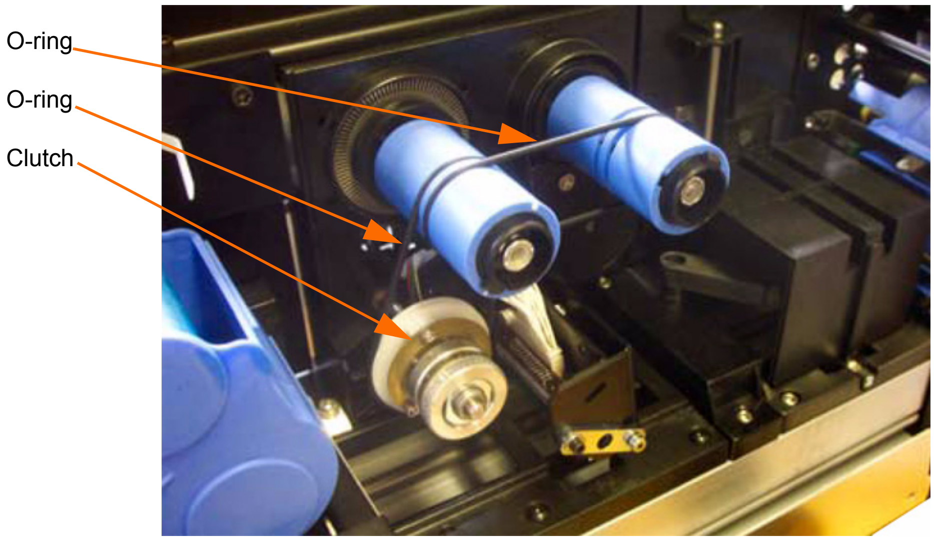

- IDPrint
File
Control
Configure
Mag Data
Energy
Help
Display Control Panel...
Display Status... Ctrl+D
Advance Ribbon
Feed Paper
Cut Paper
Move Carriage
Clean Cycle
Eject Card
Buffers
Front Panel Buttons
Diagnostic
Show Sensor Data...
Ribbon Tasks
Run Ribbon Motor (Clutch Burn-in)
Find Low Ribbon Torque
Find High Ribbon Torque
Adjust Payout Clutch
Batch File:
Magnetic Encoder Data
☐ Send Mag Data
☐ Load Mag Data from File:
Track 1:
Track 2:
Track 3:
Logging

**l.** Observe the two cores rotate counterclockwise for approximately two minutes.

**m.** When the motor stops turning, go to the next step.

**Step 2.** Find High Ribbon Torque

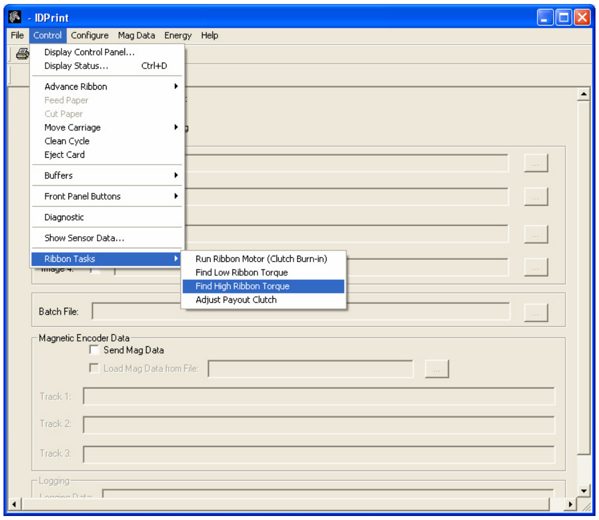
**n.** Place the Clutch onto the Guide Shaft. Note that you may have to move the Printhead down to access the Guide Shaft.


O-ring
O-ring
Clutch

**o.** Place one O-ring around the Clutch (in the rear slot) and around the left core (in the rear slot).

**p.** Install the other O-ring in the front slots on the two cores.

**q.** From the IDPrint screen, select *Control* > *Ribbon* Tasks > *Find High Ribbon Torque*:


- IDPrint
File
Control
Configure
Mag Data
Energy
Help
Display Control Panel...
Display Status... Ctrl+D
Advance Ribbon
Feed Paper
Cut Paper
Move Carriage
Clean Cycle
Eject Card
Buffers
Front Panel Buttons
Diagnostic
Show Sensor Data...
Ribbon Tasks
Run Ribbon Motor (Clutch Burn-in)
Find Low Ribbon Torque
Find High Ribbon Torque
Adjust Payout Clutch
Batch File:
Magnetic Encoder Data
☐ Send Mag Data
☐ Load Mag Data from File:
Track 1:
Track 2:
Track 3:
Logging

**r.** Observe the two cores rotate counterclockwise for approximately two minutes.

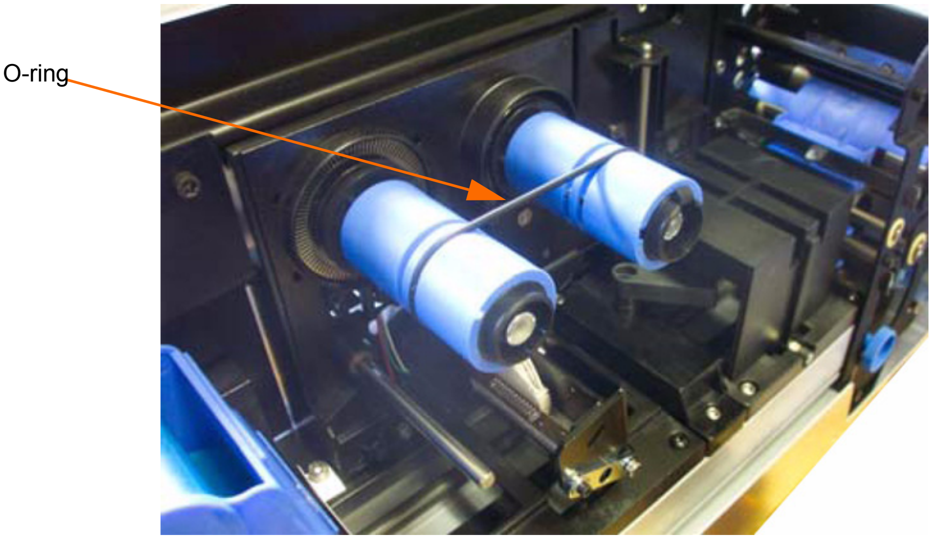
**s.** When the motor stops turning, go to the next step.

**Step 3.** Run Ribbon Motor (Clutch Burn-In)

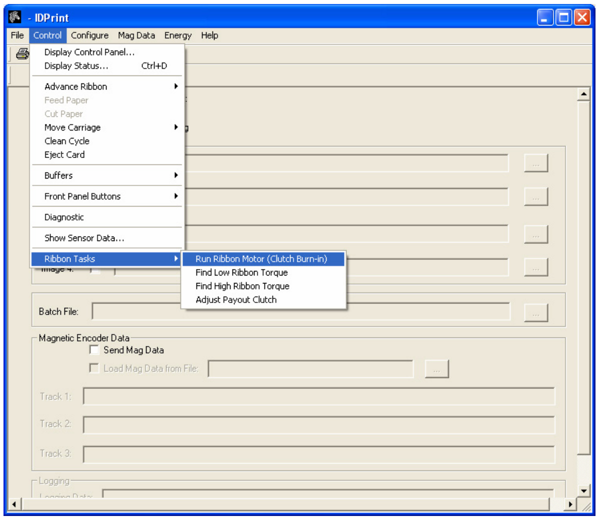
**t.** Remove the O-ring in the front slots on the cores.

**u.** Remove the Clutch and associated O-ring.

**v.** Reinstall an O-ring in the front slots on the two cores.

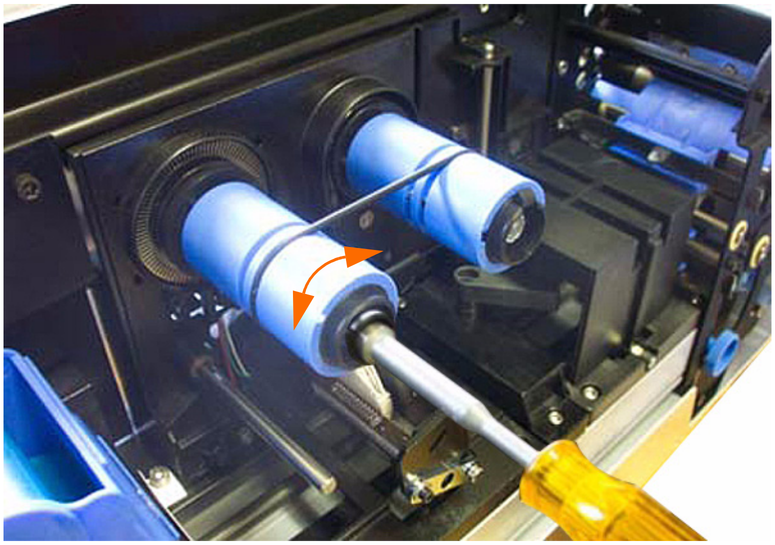


**w.** From the IDPrint screen, select *Control* > *Ribbon* Tasks > *Run Ribbon Motor (Clutch Burn-In)*:


- IDPrint
File
Control
Configure
Mag Data
Energy
Help
Display Control Panel...
Display Status... Ctrl+D
Advance Ribbon
Feed Paper
Cut Paper
Move Carriage
Clean Cycle
Eject Card
Buffers
Front Panel Buttons
Diagnostic
Show Sensor Data...
Ribbon Tasks
Run Ribbon Motor (Clutch Burn-in)
Find Low Ribbon Torque
Find High Ribbon Torque
Adjust Payout Clutch
Batch File:
Magnetic Encoder Data
☐ Send Mag Data
☐ Load Mag Data from File:
Track 1:
Track 2:
Track 3:
Logging

**x.** Observe the two cores rotate counterclockwise.

**y.** Tighten the payout spindle nut until the O-ring bows, then back off slightly.



**z.** Listen to the “hum” of the motor.

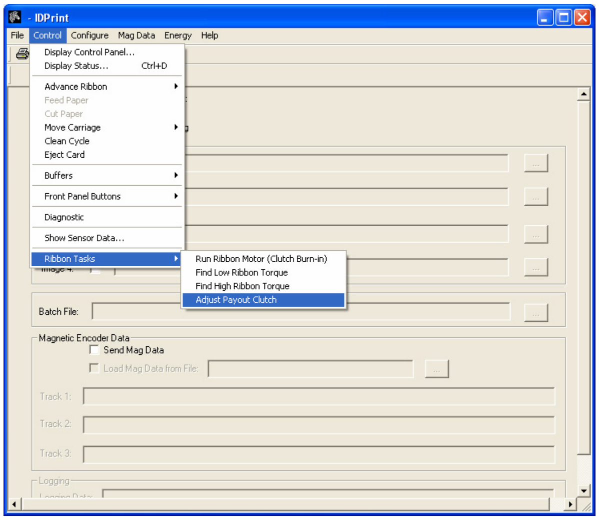
**aa.** Adjust the tightness of the payout spindle nut until the motor hum is constant.

**ab.** This test takes approximately ten minutes. When the motor stops turning, go to the next step.

**Step 4.** Adjust Payout Clutch

**Note •** You may need to repeat this step until you are satisfied with the adjustment.

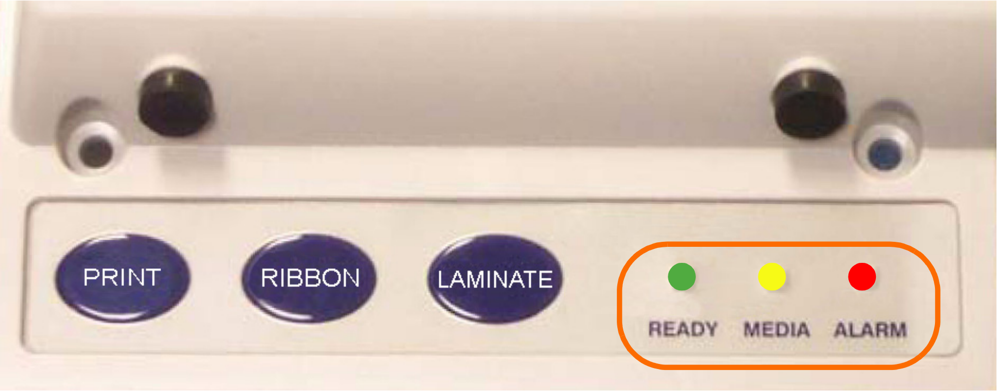
**ac.** From the IDPrint screen, select *Control* > *Ribbon* Tasks > *Adjust Payout Clutch:*


- IDPrint
File
Control
Configure
Mag Data
Energy
Help
Display Control Panel...
Display Status... Ctrl+D
Advance Ribbon
Feed Paper
Cut Paper
Move Carriage
Clean Cycle
Eject Card
Buffers
Front Panel Buttons
Diagnostic
Show Sensor Data...
Ribbon Tasks
Run Ribbon Motor (Clutch Burn-in)
Find Low Ribbon Torque
Find High Ribbon Torque
Adjust Payout Clutch
Batch File:
Magnetic Encoder Data
☐ Send Mag Data
☐ Load Mag Data from File:
Track 1:
Track 2:
Track 3:
Logging

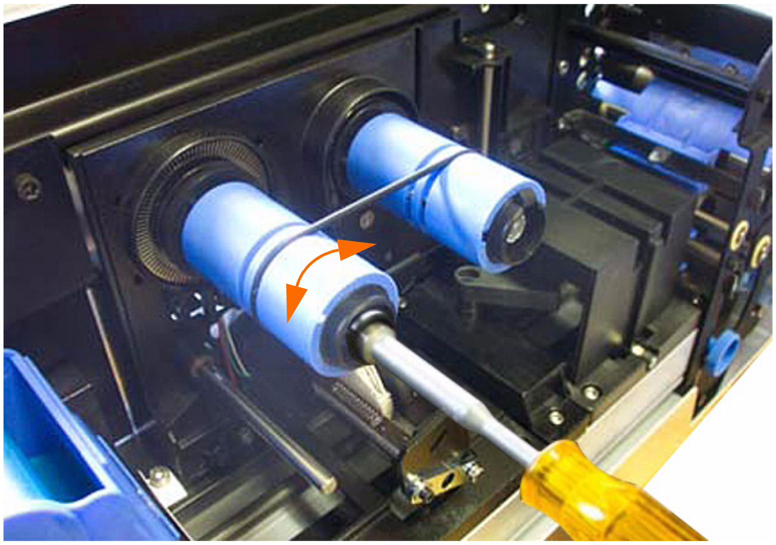
**ad.** Observe the two cores rotate counterclockwise.

**ae.** Observe the panel lights.

**Note •** The panel lights should flash an equal amount of time between Green (Ready) and Red (Alarm) -- the optimum condition would be Yellow (Media) on all the time.



**af.** Adjust the payout spindle nut as required -- if Red, tighten; if Green, loosen.



**ag.** When the motor stops turning and you are satisfied with the adjustment, go to the next step.

**Step 5.** Remove the O-ring and the two Grooved Splined Cores.

**Step 6.** Load the Ribbon.

**Step 7.** Power Cycle the Printer.

## 4.10.2 Printhead Adjustments

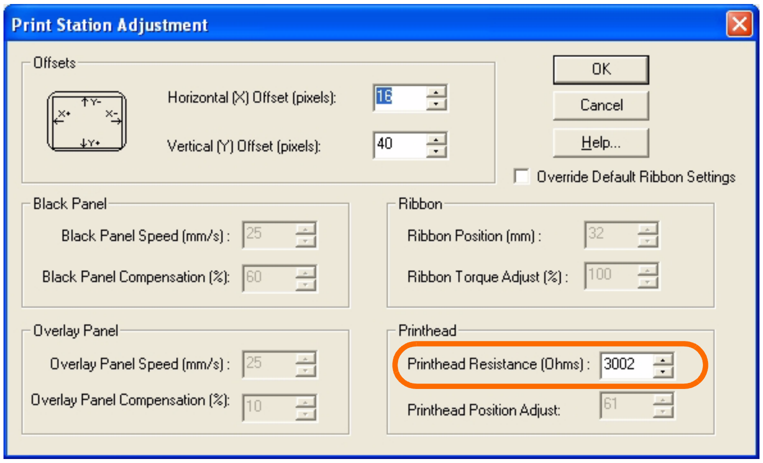
### 4.10.2.1 Printhead Resistance Setting

After changing the Printhead, go into the **Printer Driver;** and enter the Printhead resistance.

**Step 1.** Select *Start* > *Printers and Faxes,* right click the *Zebra Card Printer,* and select *Properties* from the pop-up menu.

**Step 2.** From the Card Printer Properties screen, select *Device Settings* > *Printer Adjustment* > *Print Station Adjust...*

**Step 3.** In the **Printhead Resistance (Ohms)** field, enter the resistance of the replacement Printhead noted in the previous section.



Offsets
Horizontal (X) Offset (pixels): 16
Vertical (Y) Offset (pixels): 40

☐ Override Default Ribbon Settings

Black Panel
Black Panel Speed (mm/s) : 25
Black Panel Compensation (%): 60

Ribbon
Ribbon Position (mm) : 32
Ribbon Torque Adjust (%) : 100

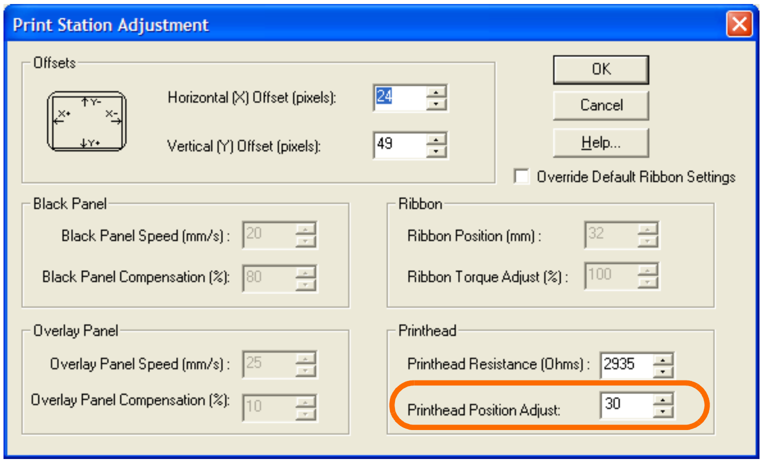
Overlay Panel
Overlay Panel Speed (mm/s) : 25
Overlay Panel Compensation (%): 10

Printhead
Printhead Resistance (Ohms) : 3002
Printhead Position Adjust: 61

## 4.10.2.2 Printhead Position (Height/Pressure) Adjustment

**Step 1.** Select *Start > Printers and Faxes,* right click the *Zebra Card Printer,* and select *Properties* from the pop-up menu.

**Step 2.** From the Card Printer Properties screen, select *Device Settings > Printer Adjustment > Print Station Adjust...*



Print Station Adjustment

Offsets
Horizontal (X) Offset (pixels): 24
Vertical (Y) Offset (pixels): 49

☐ Override Default Ribbon Settings

Black Panel
Black Panel Speed (mm/s) : 20
Black Panel Compensation (%): 80

Ribbon
Ribbon Position (mm) : 32
Ribbon Torque Adjust (%) : 100

Overlay Panel
Overlay Panel Speed (mm/s) : 25
Overlay Panel Compensation (%): 10

Printhead
Printhead Resistance (Ohms) : 2935
Printhead Position Adjust: 30

**Step 3.** In the Printhead Position Adjust field, decrease the value by 10.

**Step 4.** Print a card.

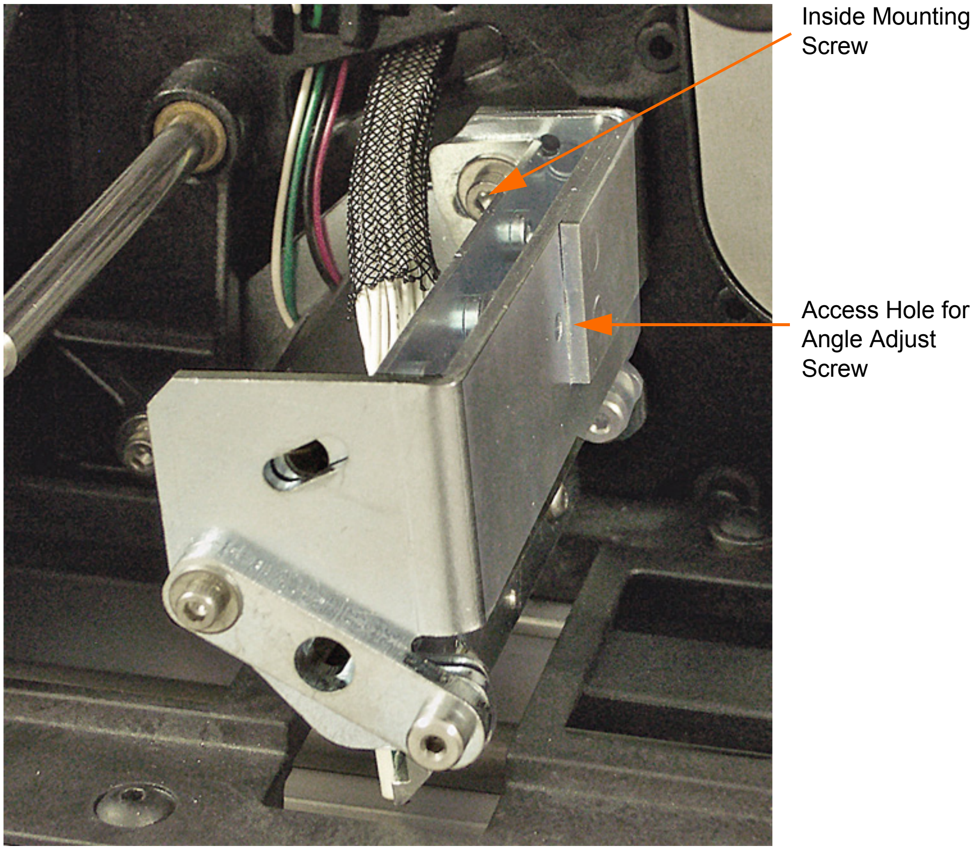
**Step 5.** If your printed card still looks good to you, repeat Step 3 and Step 4 until you get an unacceptable printing. Unacceptable printing would be light printing to the point that the image is almost not being transferred to the card.

**Step 6.** Once you have unacceptable printing, add 60 to your Printhead Position Adjust. This will set your optimal printhead height.

### 4.10.2.3 Printhead Angle Adjustment

**Step 1.** If not already done, remove the Printhead Cover; and move the ground wire out of the way.

**Step 2.** Loosen the inside mounting screw just enough to allow sliding movement of the printhead bracket.



**Step 3.** Unlock the angle adjust screw, turn it a quarter-turn counterclockwise, then re-lock it. This will have the effect of rotating the head *counterclockwise* a fraction of a degree when you snug the button head against the printhead frame.

**Step 4.** Tighten the inside mounting screw.

**Step 5.** Print another Test Card. If there is a noticeable improvement, try another quarter-turn adjustment, then print again.

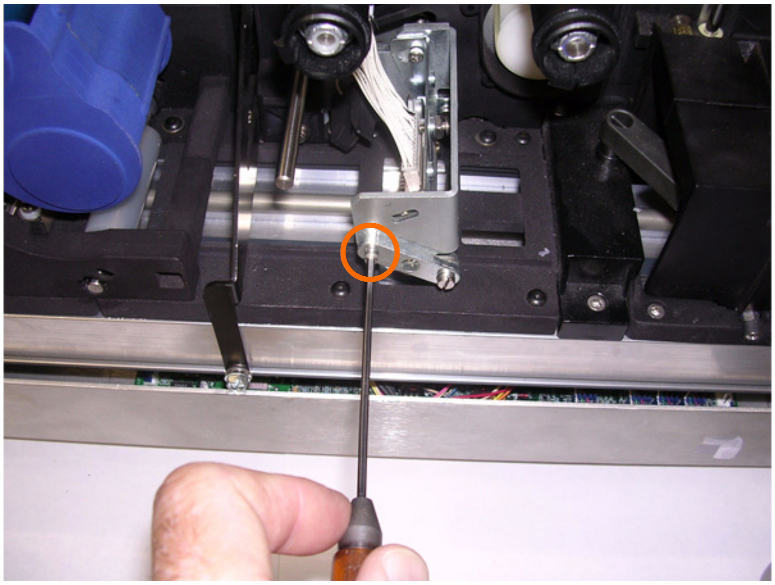
**Step 6.** If the print quality is seen to deteriorate rather than improve, return to the previous setting or the 30-mil preset setting of the head angle screw, then rotate it *clockwise* in quarter-turn increments.

**Step 7.** This adjustment is complete when you are satisfied with the Test Card image quality.

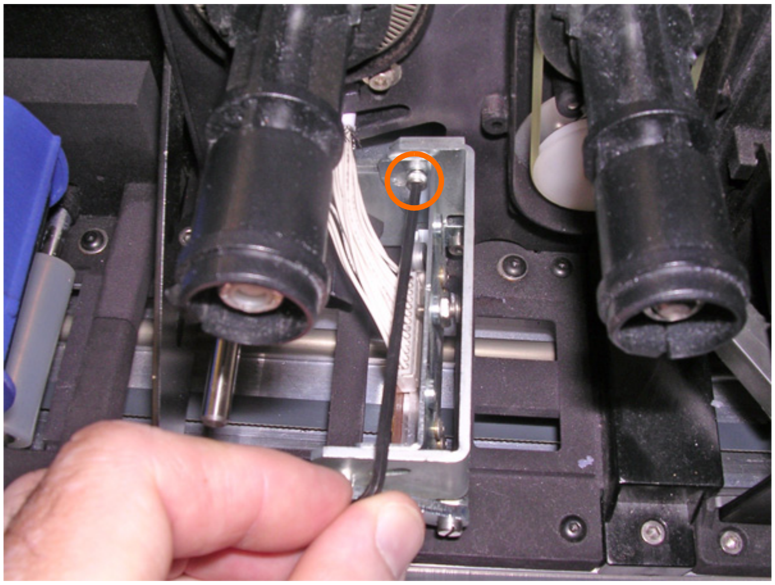
**Step 8.** Install the Printhead Cover (and ground wire). The ground wire is secured with the *longer* of the two cover screws.

### 4.10.2.4 Image Skew Adjustment

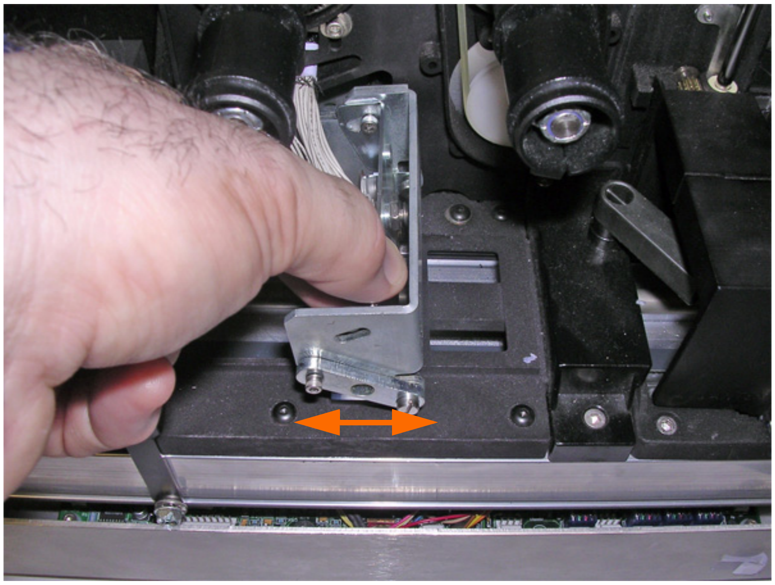
**Step 1.** With a 3/32 hex driver, loosen the Skew Adjust Screw.



**Step 2.** With a 7/64 hex driver, loosen the Inside Mounting Screw.



**Step 3.** With the two screws loosened, the Printhead can now pivot left or right, and the image skew can be corrected.



**Step 4.** Tighten the Inside Mounting Screw first and then the Skew Adjust Screw.

**Step 5.** Print a card to see if the image is centered. If the image is still skewed adjust the printhead again until the image skew is corrected.

## 4.10.3 Flip Station Adjustments

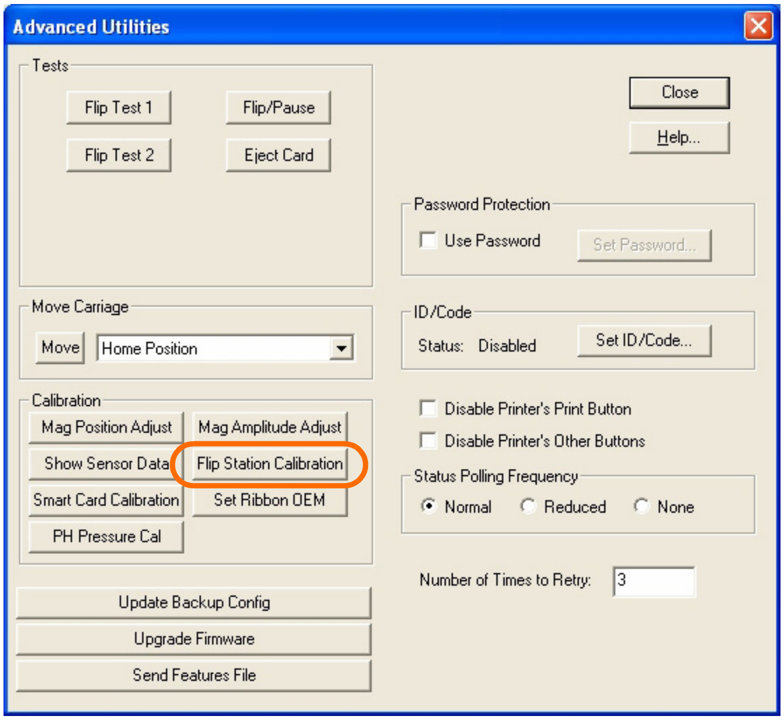
### 4.10.3.1 Flip Station Calibration

This routine determines the number of motor steps it takes for the carrier to descend from the *upper limit* position to the *lower limit* position, that being the carrier’s physical end stop. This stored number is used to drive the carrier down to the rest position before each and every flip station action.

Calibration is a one-time setup routine, but is also a useful starting point when diagnosing flip station problems.

**Step 1.** Power OFF, lift the cover, and then push the carrier down to its physical end stop. When pushing the carrier down, push at the back of the carrier, near the guide shaft. Do not force!

**Step 2.** Access the Advanced Utilities screen: select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Device Settings* > *Control* > *Advanced Utilities.*


Advanced Utilities
Tests
Flip Test 1
Flip/Pause
Flip Test 2
Eject Card
Close
Help...
Password Protection
☐ Use Password
Set Password...
Move Carriage
Move
Home Position
ID/Code
Set ID/Code...
Calibration
Mag Position Adjust
Mag Amplitude Adjust
Show Sensor Data
Flip Station Calibration
Smart Card Calibration
Set Ribbon OEM
PH Pressure Cal
☐ Disable Printer's Print Button
☐ Disable Printer's Other Buttons
Status Polling Frequency
● Normal ○ Reduced ○ None
Update Backup Config
Upgrade Firmware
Send Features File

Status: Disabled

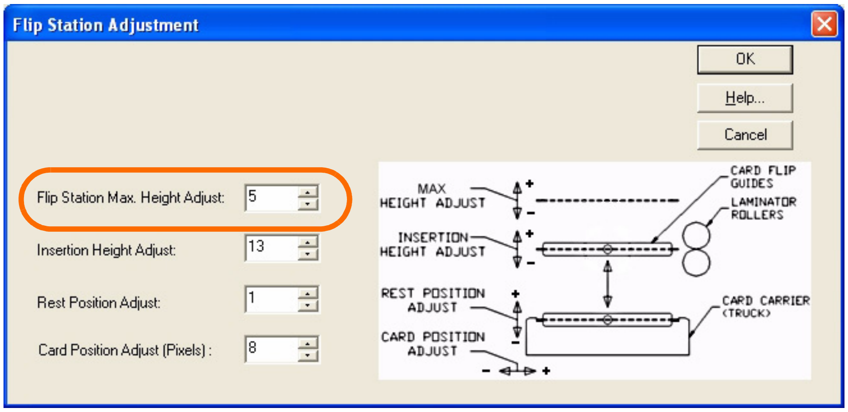
Number of Times to Retry: 3

**Step 3.** Click the Flip Station Calibration button. This elevates the carrier to the *upper limit* position, at which point the motor stops, and the step count is saved in flash memory. The motor then drives the carrier back down to the *lower limit* position.

## 4.10.3.2 Max Height Adjust

The card carrier needs to move high enough to actuate the flipping mechanism, but should not over-travel excessively.

To access the Flip Station Adjustment screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Device Settings* > *Printer Adjustment* > *Flip Station Adjust...*


Flip Station Adjustment
OK
Help...
Cancel
MAX HEIGHT ADJUST
INSERTION HEIGHT ADJUST
REST POSITION ADJUST
CARD POSITION ADJUST
CARD FLIP GUIDES
LAMINATOR ROLLERS
CARD CARRIER (TRUCK)
+
-

Flip Station Max. Height Adjust: 5

Insertion Height Adjust: 13

Rest Position Adjust: 1

Card Position Adjust (Pixels) : 8

Increase this parameter only if there is an occasional failure to flip.

Reduce this value if the carrier hits the upper bracket holding the guide shaft.

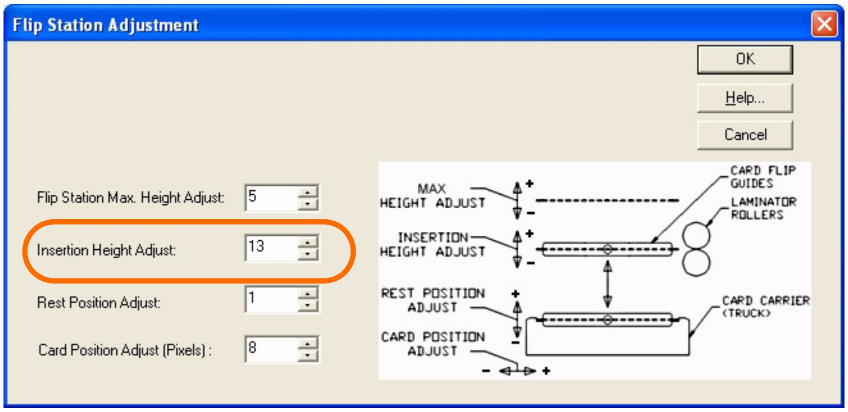
If the flip station is not flipping reliably, be sure it is a travel issue rather than anything else by opening the printer cover and moving the flip station up by hand to activate the flip. If it doesn't flip, the mechanism itself is defective, so adjusting the height parameter will have no effect.

If you overdo the height adjustment (i.e., sending the carrier too high), the U-shaped azimuth-adjust molding may be driven off the end of its track. This causes the carrier to wobble as the "U" re-engages on the way down.

### 4.10.3.3 Insertion Height Adjust

“Insertion height” is the intermediate (non flipping) elevation to which the card is driven for insertion into the laminator.

To access the Flip Station Adjustment screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Device Settings* > *Printer Adjustment* > *Flip Station Adjust...*


Flip Station Adjustment
OK
Help...
Cancel
MAX HEIGHT ADJUST
INSERTION HEIGHT ADJUST
REST POSITION ADJUST
CARD POSITION ADJUST
CARD FLIP GUIDES
LAMINATOR ROLLERS
CARD CARRIER (TRUCK)
+
-

Flip Station Max. Height Adjust: 5

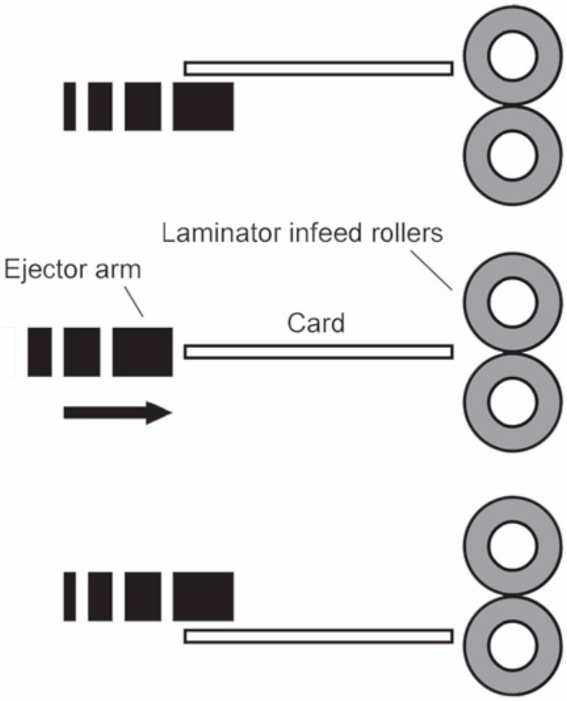
Insertion Height Adjust: 13

Rest Position Adjust: 1

Card Position Adjust (Pixels) : 8

Adjust the parameter if the ejector arm misses the card.

Raise the insertion height by increasing the parameter (making it less negative), and vice versa.


Laminator infeed rollers
Ejector arm
Card

### 4.10.3.4 Rest Position Adjust

This procedure adjusts how far down the carrier drives.

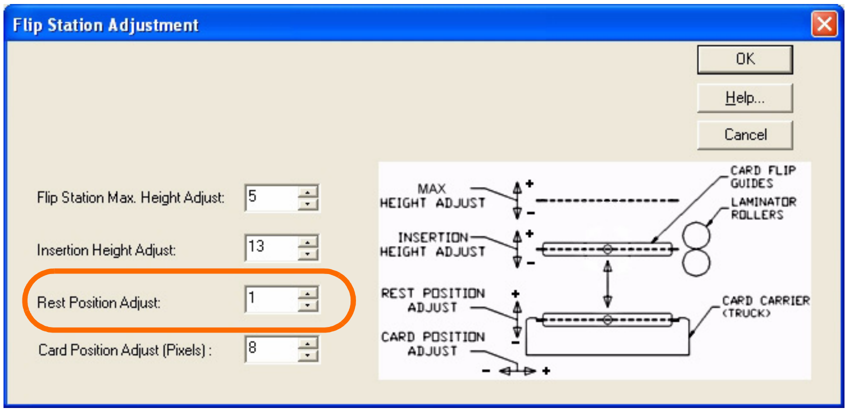
If the truck fails to pull the card out of the flip station after the flipping action, chances are:

1. The card position is wrong; see 'Card Position Adjust' on page 141.
2. The carrier is not coming down all the way; repeat 'Flip Station Calibration' on page 137.

Another adjustment for this:

**Step 1.** Power down the printer, then power up and listen for the flip station reset action.

**Step 2.** Access the Flip Station Adjustment screen, select *Start > Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties > Device Settings > Printer Adjustment > Flip Station Adjust...*


Flip Station Adjustment
OK
Help...
Cancel
MAX HEIGHT ADJUST
INSERTION HEIGHT ADJUST
REST POSITION ADJUST
CARD POSITION ADJUST
CARD FLIP GUIDES
LAMINATOR ROLLERS
CARD CARRIER (TRUCK)
+
-

Flip Station Max. Height Adjust: 5

Insertion Height Adjust: 13

Rest Position Adjust: 1

Card Position Adjust (Pixels) : 8

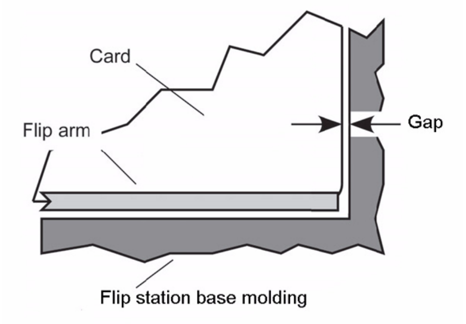
**Step 3.** Open the main cover, then push gently down on the carrier (at the back, close to the guide shaft). If there is any downward travel, increase the parameter (make it less negative) -- but do not overdo it, because this will increase the reset noise and potentially damage the carrier drive.

### 4.10.3.5 Card Position Adjust

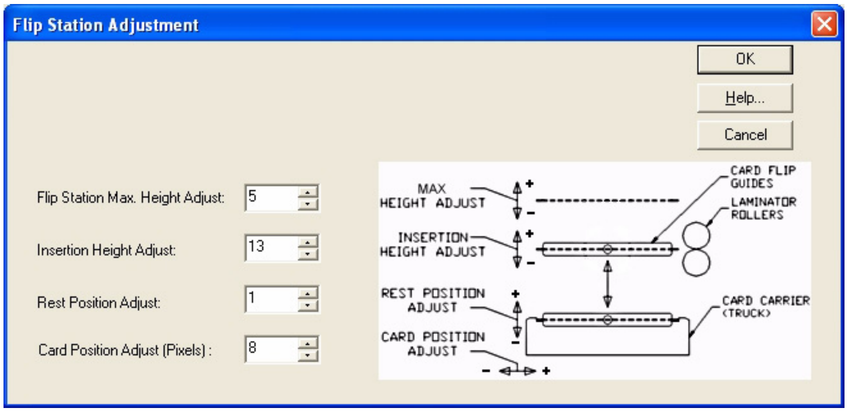
This procedure adjusts how far the truck drives into the Flip Station. The adjustment should be set so that the card is centered in the flip arms (if it is not centered, the truck may have difficulty removing the card after the flipping action).

To move the card into the Flip Station, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Device Settings* > *Control* > *Advanced Utilities* > *Move Carriage.* From the drop-down menu, select *Flip Position*. Press the Move button.

The card should drive smoothly to rest almost touching the right hand edge of the flip station base molding. It must not rebound off the edge. The card should land with a gap of between 0.04" and 0.1" (1.0 mm to 2.5 mm). The exact gap is not critical, but it has to be visibly there.


Card
Flip arm
Gap
Flip station base molding

To access the Flip Station Adjustment screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Device Settings* > *Printer Adjustment* > *Flip Station Adjust...*


Flip Station Adjustment
OK
Help...
Cancel
MAX HEIGHT ADJUST
INSERTION HEIGHT ADJUST
REST POSITION ADJUST
CARD POSITION ADJUST
CARD FLIP GUIDES
LAMINATOR ROLLERS
CARD CARRIER (TRUCK)

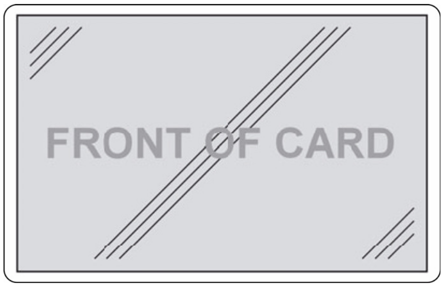
Flip Station Max. Height Adjust: 5
Insertion Height Adjust: 13
Rest Position Adjust: 1
Card Position Adjust (Pixels) : 8

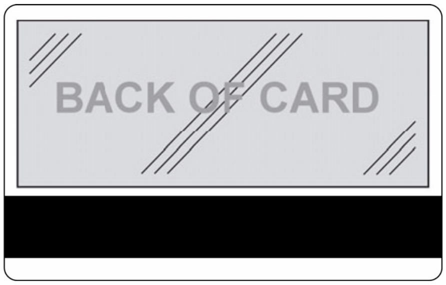
To move the card further to the right, increase (make less negative) the Card Position Adjust parameter, and vice versa.

**Important** • This is a critical adjustment. What can happen if the card position is incorrect? The truck can depart, leaving the card in the flip arms, or it may drag the card an inch or two toward the print station, then jam.

## 4.10.4 Laminator Adjustments

Correctly positioned top (front) and bottom (back) laminate patches If there is no magnetic stripe on the underside, a full width patch should be used.



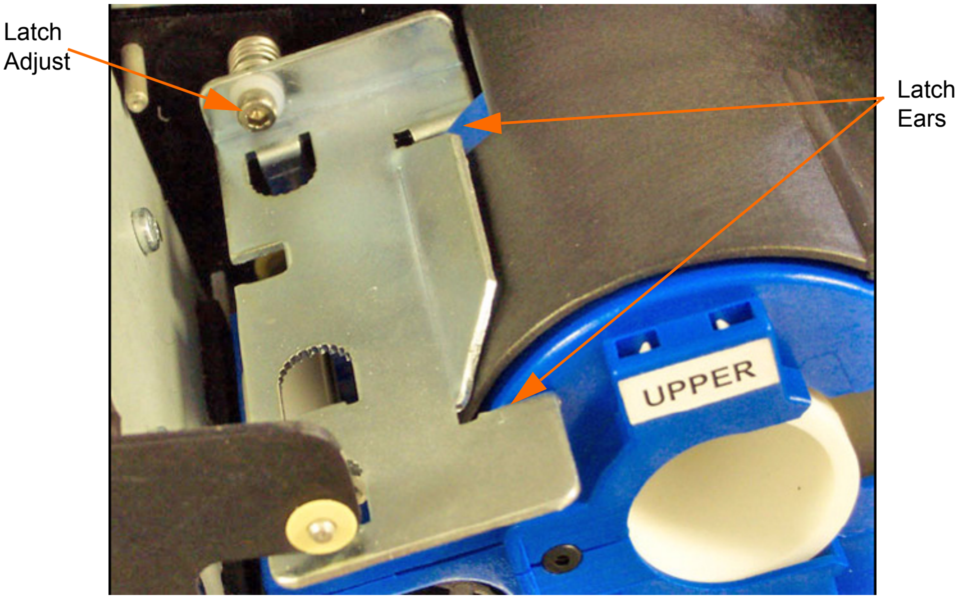


Positioning of the patch is affected by three variables: 1. *Horizontal offset* (left-right), 2. *Skew* (rotation); 3. *Vertical offset* (up-down). Horizontal offset is a software adjustment. Skew and vertical offset are mechanical adjustments.

### 4.10.4.1 Latch Adjustment

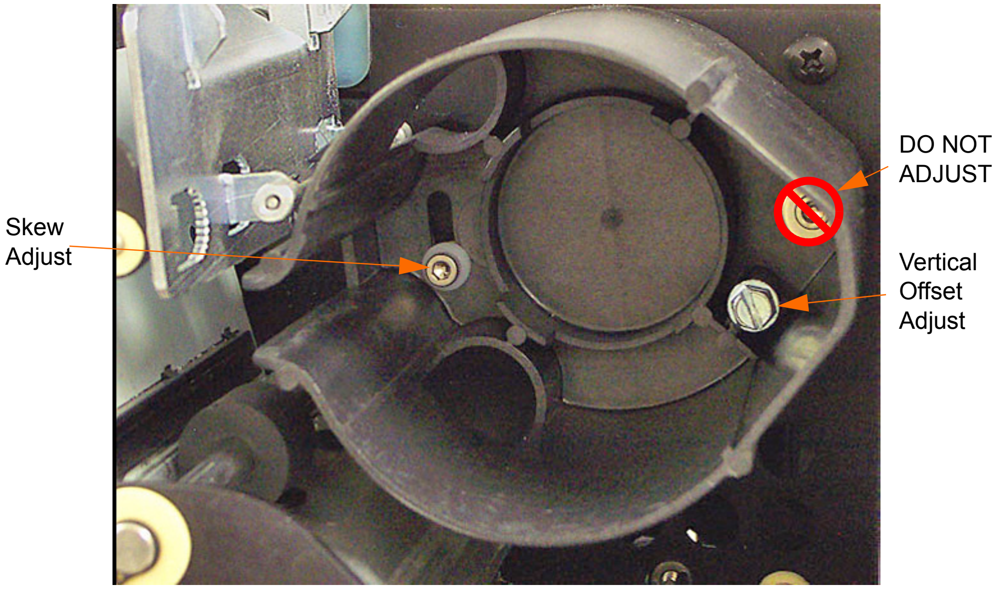
The cassette is held in place by two ears on the cassette latch. Using a piece of 1 mil laminate as a feeler gauge, set the *front* ear close to, but not touching, the cassette. A hex head screw (arrowed) sets front-back position of the latch.

Adjust the latch position using a 7/64" hex wrench.

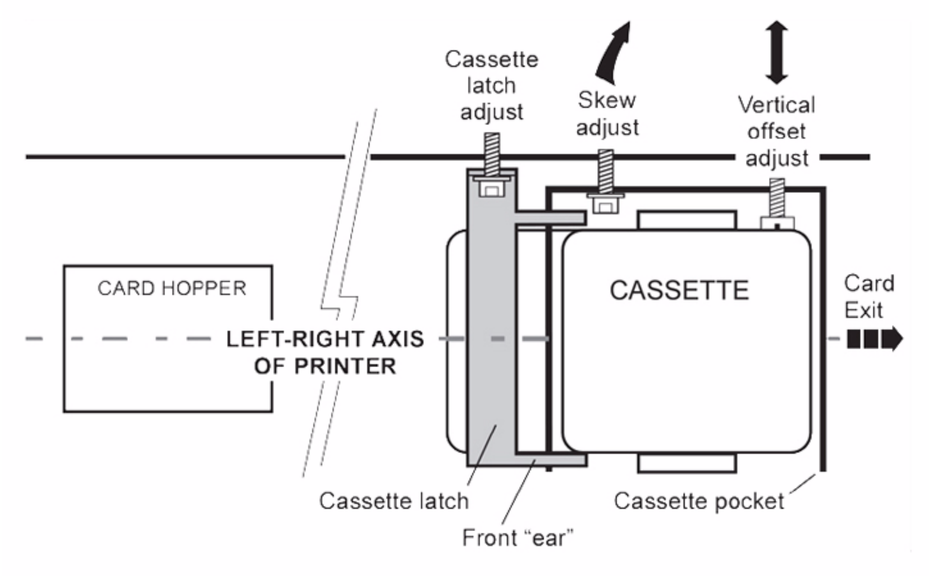


### 4.10.4.2 Pocket Adjustment

Skew and vertical offset are adjusted by screws in the cassette pocket (7/64" hex wrench for skew, flat blade screwdriver for vertical offset, see diagram below).


Skew
Adjust
DO NOT
ADJUST
Vertical
Offset
Adjust

Before adjusting for skew or vertical offset, remember that there is significant interaction between the latch and the adjusting screws in the pocket.

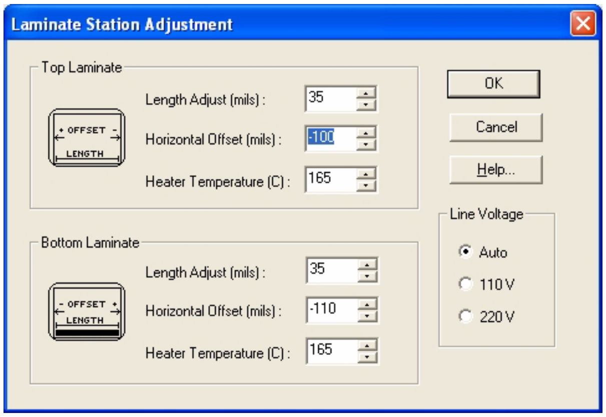

Cassette
latch
adjust
Skew
adjust
Vertical
offset
adjust
CARD HOPPER
LEFT-RIGHT AXIS
OF PRINTER
CASSETTE
Card
Exit
Cassette latch
Front "ear"
Cassette pocket

**Important** • Always adjust the latch after adjusting either of the screws in the pocket.

### 4.10.4.3 Horizontal Offset Adjust

To access the Laminate Station Adjustment screen, select *Start > Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties > Device Settings > Printer Adjustment > Laminate Station Adjust...*

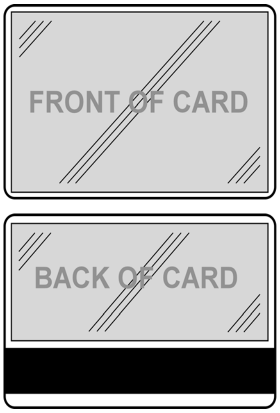
Accurate positioning of the laminate is important for practical and aesthetic reasons. The laminate must cover the entire image as printed at the time of issuance, thus protecting critical data with a tamper-deterrent film. If there is no magnetic stripe on the underside, a full width laminate should be used.


Laminate Station Adjustment

Top Laminate
Length Adjust (mils) : 35
Horizontal Offset (mils) : -100
Heater Temperature (C) : 165

Bottom Laminate
Length Adjust (mils) : 35
Horizontal Offset (mils) : -110
Heater Temperature (C) : 165

Line Voltage
● Auto
○ 110 V
○ 220 V



1. **Length Adjust (mils)** - This is the length of the laminate “patch”. If the patch is too long, decrease this number, and vice versa.

2. **Horizontal Offset (mils)** - Adjusts laminate placement on the card.

3. **Heater Temperature**

**Caution** • Do not set the Heater Temperature above 180°C, or below room temperature.

This is the set point temperature (i.e., the temperature desired) not the actual temperature. For actuals, see Sensor Data (*Sensor Data on page 71*). NOTE: Temperatures are monitored by thermocouples at the *core* of the heated rollers. Surface temperatures may differ significantly.

4. **Line Voltage**

**Caution** • Running the printer at 220V, 60Hz in Auto mode may cause premature failure of the heaters. Running the printer at 110V, 50Hz in Auto mode may cause abnormally long heat-up time and poor temperature control.

If Auto is selected, the printer guesses line voltage based on line frequency, assuming that 110V will be @ 60Hz and 230V @ 50Hz. If this is not the case in your locality, the printer will guess wrong; and you should set the voltage manually.

### 4.10.4.4 Skew Adjustment Procedure (upper cassette)

**Note •** The following procedure assumes that the horizontal offset has been software corrected as described in the previous section.

**Step 1.** Check the action of the cassette latch. If necessary adjust its fore-aft position so that its ears smoothly engage the cassette without nudging the cassette.

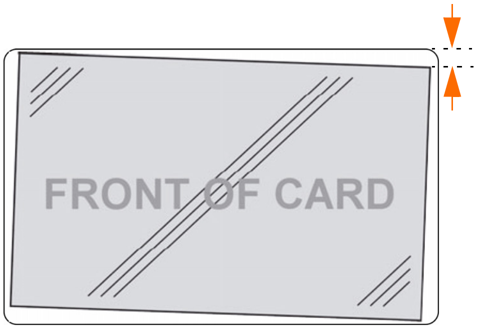
**Step 2.** Print and laminate a few test cards in the usual way, noting the direction of skew. (Don't worry about vertical offset at this stage unless the laminate overhangs grossly, in which case proceed to the *Vertical offset adjustment procedure*).

**Step 3.** Unlatch and remove the upper cassette from its pocket. Rotate the laminate core counterclockwise, *reeling in the laminate* to bring it even with the lips of the cassette - VERY IMPORTANT! Set the cassette aside.

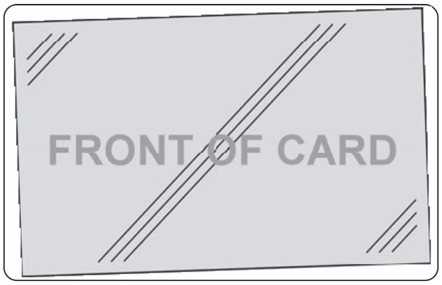
**Step 4.** Remove the upper transfer guide, then discard the laminate patch on the upper transfer roller. (If you don't do this, the next patch to be applied will *not* reflect the skew adjustment you are about to make.)

**Step 5.** Using a fiber-tip pen, mark the skew adjust screw head for reference.

**Step 6.** Using a 7/64" hex wrench, turn the skew adjust screw in ¼ turn increments as directed in diagrams below. NOTE: One full turn of the screw de-skews the laminate by approximately 1°, equivalent to 0.03" (just under 1 mm) measured as shown in diagram.



To correct this condition turn the skew adjust screw clockwise



To correct this condition turn the skew adjust screw counterclockwise

**Step 7.** Re-install the cassette.

**Step 8.** Adjust the cassette latch screw in the same direction, by the same amount.

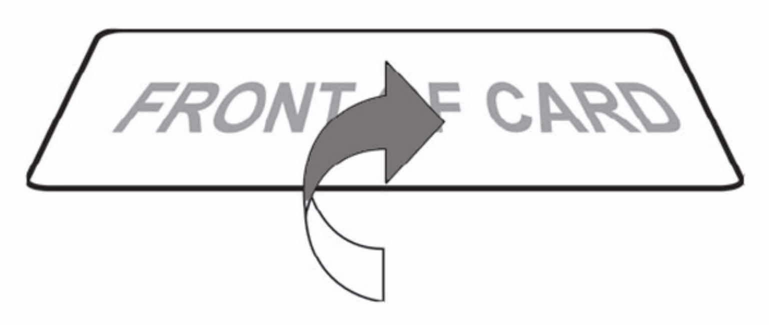
**Step 9.** If you have not already done so, remove and discard the laminate patch on the upper transfer roller, close the printer cover, then press the LAMINATE button to run out a fresh patch from the upper cassette.

**Step 10.** Print a test card and inspect for skew.

**Step 11.** Repeat Step 6 through Step 10 until the laminate is correctly positioned.

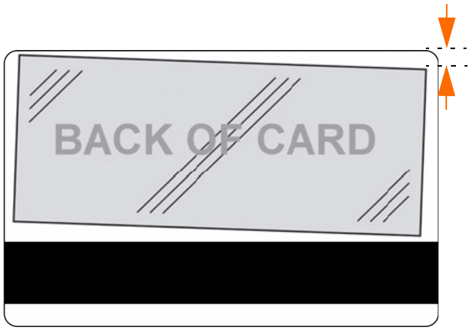
### 4.10.4.5 Skew Adjustment Procedure (lower cassette)

Once the front surface skew is consistently acceptable, inspect the back surface patches of the last few cards to pass through the laminator. Note the direction of skew on the back surface. (Don't worry about vertical offset at this stage unless the laminate overhangs grossly, in which case proceed to the *Vertical offset adjustment procedure.*) When flipping the cards for inspection, keep the mag stripe (if present) toward you.

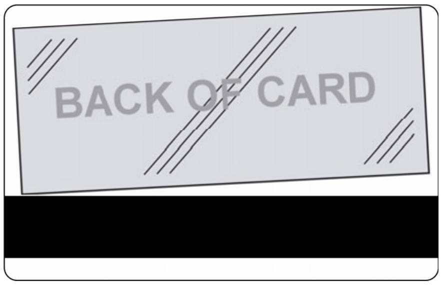


Flip the cards left to right (not front to back)

Referring to diagrams below, correct for skew in the lower laminator using the same procedure as in Step 1 through Step 11 for the upper cassette; but *note* that the "reel in" direction for Step 3 will be *clockwise* for the lower cassette as it sits in the printer.



To correct this condition turn the skew adjust screw counterclockwise



To correct this condition turn the skew adjust screw clockwise

### 4.10.4.6 Vertical Offset Adjustment (upper cassette)

**Note •** The following procedure assumes that the horizontal offset has been software-corrected, and that skew has been corrected.

**Step 1.** Check the action of the cassette latch. If necessary adjust its fore-aft position so that its ears smoothly engage the cassette without nudging the cassette.

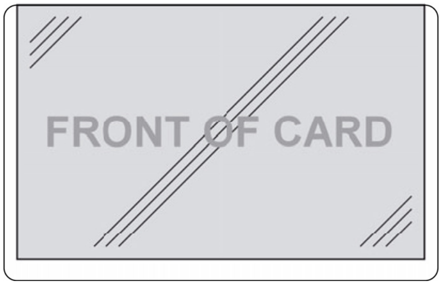
**Step 2.** Print and laminate a few test cards in the usual way, noting the vertical offset (front-to-back position) of the laminate patch on the front of the card.

**Step 3.** Unlatch and remove the upper cassette from its pocket. Rotate the laminate core counterclockwise, reeling in the laminate to bring it even with the lips of the cassette. Set the cassette aside.

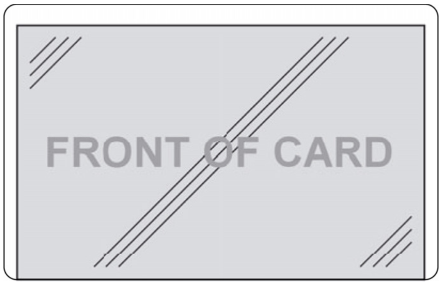
**Step 4.** Remove the upper transfer guide, then discard the laminate patch on the upper transfer roller. (If you don’t do this, the next patch to be applied will not reflect the vertical offset adjustment you are about to make.)

**Step 5.** Using a fiber-tip pen, mark the vertical offset adjust screw head for reference.

**Step 6.** Using a flat blade screwdriver, turn the vertical offset adjust screw in ¼ turn increments as directed in diagrams below. NOTE: One full counterclockwise turn of the screw pushes out the cassette, and therefore the laminate patch, by approximately 0.03" (just under 1 mm).



To correct this condition turn the vertical offset adjust screw counterclockwise



To correct this condition turn the vertical offset adjust screw clockwise

**Step 7.** Re-install the cassette.

**Step 8.** Adjust the cassette latch screw in the same direction, by the same amount.

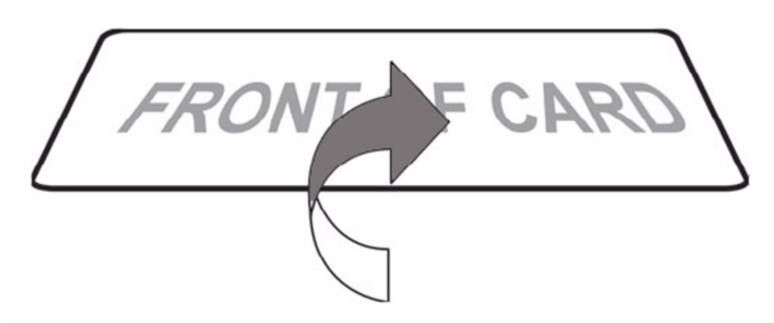
**Step 9.** If you have not already done so, remove and discard the laminate patch on the upper transfer roller, close the printer cover, then press the LAMINATE button to run out a fresh patch from the upper cassette.

**Step 10.** Print a test card and inspect for vertical offset.

**Step 11.** Repeat Step 6 through Step 10 until the laminate is correctly positioned.

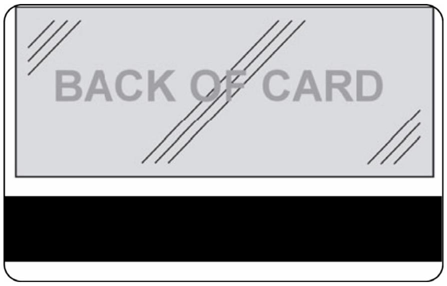
## 4.10.4.7 Vertical Offset Adjustment (lower cassette)

Once the front surface offset is consistently acceptable, inspect the back surface patches of the last few cards to pass through the laminator. Note the offset on the back surface. When flipping the cards for inspection, keep the mag stripe (if present) toward you.

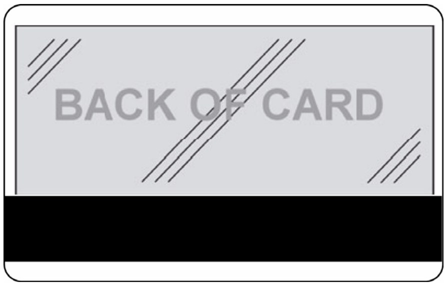


Flip the cards left to right (not front to back)

Referring to diagrams below, correct for vertical offset in the lower laminator using the same procedure as in Step 1 through Step 11 for the upper cassette; but *note* that the “reel in” direction for Step 3 will be *clockwise* for the lower cassette as it sits in the printer.



To correct this condition turn the vertical offset adjust screw counterclockwise



To correct this condition turn the vertical offset adjust screw clockwise

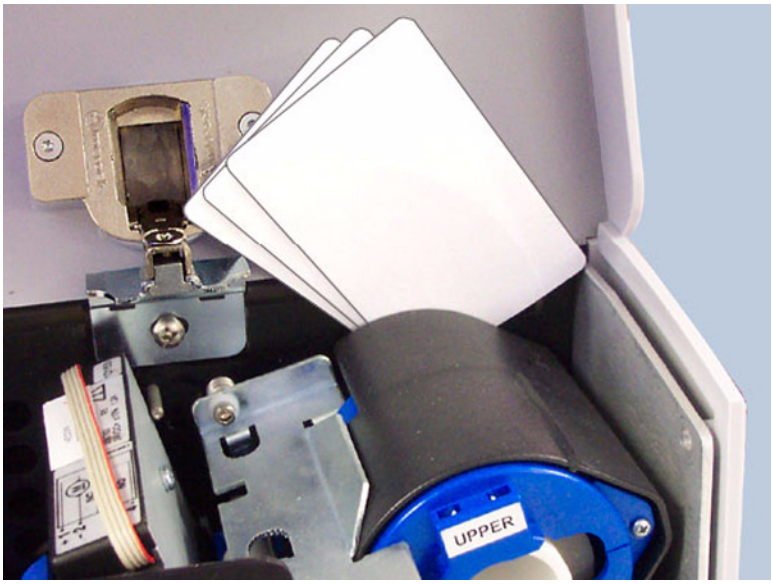
### 4.10.4.8 Cassette Pocket Reset

Skew is caused by misalignment of the laminate cassette relative to the left-right axis of the printer, looking down on the printer from above. The skew adjust screw causes the pocket to rotate relative to the left-right axis. The vertical offset adjust screw controls the depth of the cassette in the pocket. Note that the front ear of the latch must be in close contact with the cassette, without changing its position.

Reset the cassette pocket like this if the pocket has been replaced, or if the laminate is grossly misaligned.

**Step 1.** Back off the vertical offset adjust screw, skew adjust screw, and cassette latch adjust screws.

**Step 2.** Using three CR-80 cards [total thickness 0.090" (2.3 mm)] as a feeler gauge in the gap between the pocket and back plate, adjust for skew and vertical offset until the gap is an even 0.090" across the width of the pocket.

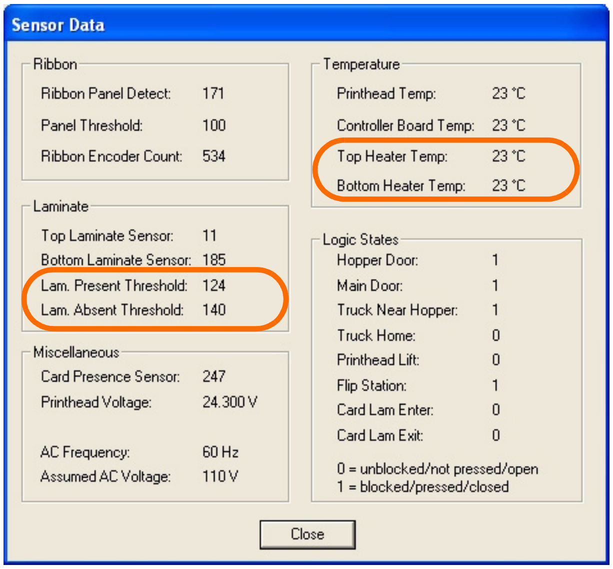


**Step 3.** With a cassette in the pocket, adjust the latch screw so that the latch's front ear is snug to the cassette but does not shift it out of position.

The pocket is now in its default position -- as assembled in production before adjustments in final test.

## 4.10.4.9 Laminator Parameters in the Driver

To access the Status screen, select *Start > Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties > Device Settings* > *Control* > *Advanced Utilities > Show Sensor Data*



Ribbon

| | |
|---|---|
| Ribbon Panel Detect: | 171 |
| Panel Threshold: | 100 |
| Ribbon Encoder Count: | 534 |

Laminate

| | |
|---|---|
| Top Laminate Sensor: | 11 |
| Bottom Laminate Sensor: | 185 |
| Lam. Present Threshold: | 124 |
| Lam. Absent Threshold: | 140 |

Miscellaneous

| | |
|---|---|
| Card Presence Sensor: | 247 |
| Printhead Voltage: | 24.300 V |
| AC Frequency: | 60 Hz |
| Assumed AC Voltage: | 110 V |

Temperature

| | |
|---|---|
| Printhead Temp: | 23 °C |
| Controller Board Temp: | 23 °C |
| Top Heater Temp: | 23 °C |
| Bottom Heater Temp: | 23 °C |

Logic States

| | |
|---|---|
| Hopper Door: | 1 |
| Main Door: | 1 |
| Truck Near Hopper: | 1 |
| Truck Home: | 0 |
| Printhead Lift: | 0 |
| Flip Station: | 1 |
| Card Lam Enter: | 0 |
| Card Lam Exit: | 0 |

0 = unblocked/not pressed/open
1 = blocked/pressed/closed

1. Heater Temperatures -Temperatures measured by thermocouples in the top and bottom laminator heater cores.

2. Laminate Sensors - Reflective sensors that detect the presence of laminate on the transfer rollers. The threshold numbers are:

   - Lam Present Threshold = Below 124 (laminate present)
   - Lam Absent Threshold = Above 140 (laminate absent)

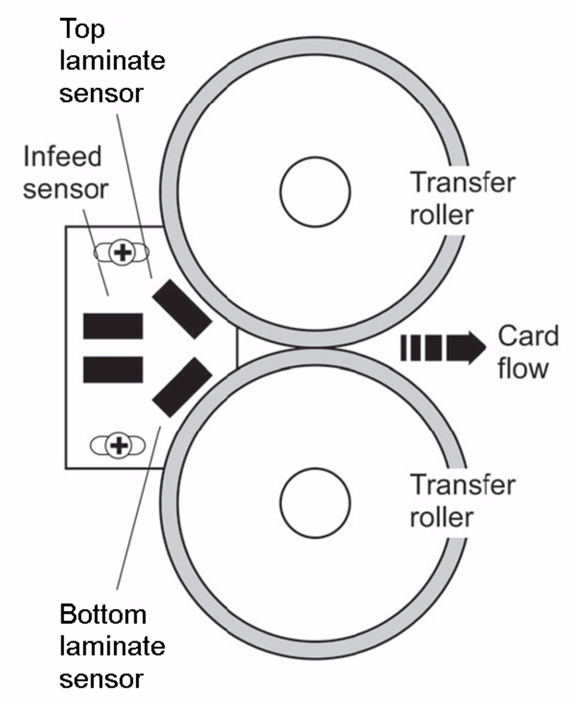
   The threshold numbers are not adjustable.

   Accurate positioning of the laminate sensors is essential! If they do not detect laminate reliably, performance of the entire printer is compromised.

### 4.10.4.10 Functional Test of the Laminator Sensors

**Step 1.** From each of the laminators, upper and lower, remove the transfer guide and the laminate patch, if any, beneath it.The sensor should read high, around 250.

**Step 2.** Replace the guide, and the sensor should read no lower than 180. If lower than 180, move the sensor board away from the transfer rollers, to the left, diagram below.


Top laminate sensor
Infeed sensor
Transfer roller
Card flow
Transfer roller
Bottom laminate sensor

**Step 3.** Complete the test by running laminate onto the rollers (press the LAMINATE button). The sensor should read below 20. Adjust sensor board to correct.

**Step 4.** The sensor board must be symmetrically positioned relative to the transfer rollers, with its attachment screws central in their slots. It is possible to get a false “good” reading if the sensors are too close to the feed rollers.

# 5

# Replacement Procedures

## 5.1 Introduction

The following sections describe removing both major assemblies and, where applicable, subassemblies and/or components that are considered replaceable.

In general, only removal directions are presented; unless otherwise noted, replacement would be performed by reversing the removal steps. Replacement instructions for some items are not presented; removal and replacement of these items are considered too obvious to warrant a detailed description.

The *Spares List* is in *Appendix G*.

**Electric Shock Caution •** Before performing any of the procedures in this section, set the printer power to OFF (O) and disconnect the power cord.

**Electrostatic Discharge Caution •** All replacement procedures must be performed at a static-free work station, an anti-static wrist strap must be worn and properly terminated, or other appropriate protection must be used.

**Caution •** Before beginning any of the procedures that follow, read completely through the procedure. If you do not have the specified tools, or if any step(s) seem beyond your skill or experience level, do not attempt the procedure. You may cause additional damage to the printer.

**Note •** Some of the photographs in this section may show additional parts removed in addition to removals for the process being described.

## 5.2 Required Tools

This section lists the tools required for the replacement procedures described in this section. Naturally, not all tools are required for a particular procedure; specific tools are called out in each step as appropriate.

**Important •** When removing **any** of the nylon or plastic pulleys or gears, the use of a gear puller is strongly recommended. If a gear puller is not available, use pliers and/or a flat-blade screwdriver to pry the gear or pulley off its shaft.

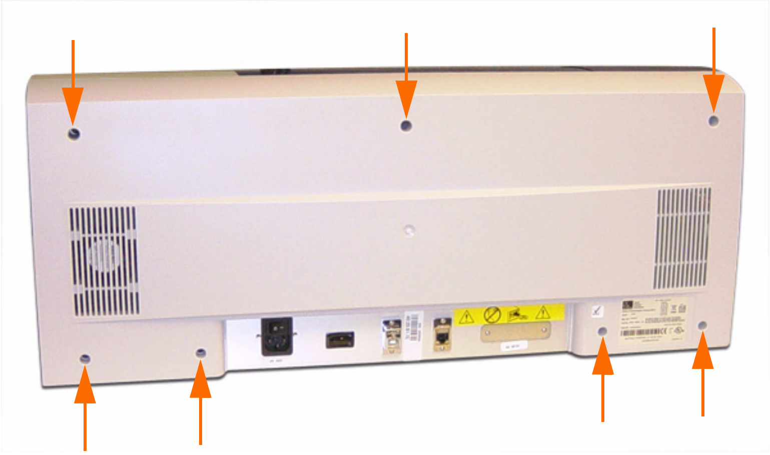
In either case, remove any Loctite residue from the shaft and the gear/pulley.

Inspect the old gear/pulley **very** carefully. If any teeth have burrs, are missing, or are damaged, or if the center hole is distorted or enlarged, the gear/pulley **must** be replaced rather than the old one re-installed.

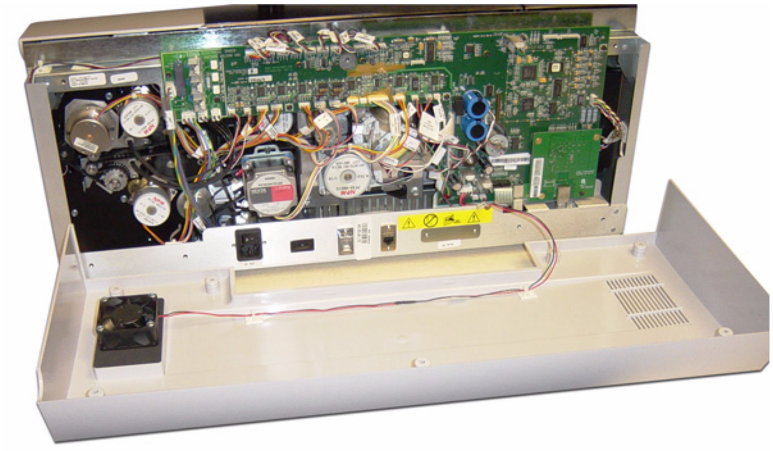
1. 5/64", 3/32", 7/64", 5/32", & 9/64" Regular and Ballpoint Hex Drivers
2. 6-1/2" Channel Lock Pliers
3. 3/32, 5/16, & 5/32 Slotted Screwdrivers
4. #0, #1, & #2 Phillips Screwdrivers
5. 3 pc File Set
6. Surface Mount and Round Nose Cutters
7. 1/4" & 5/16" Open End Wrenches
8. T10, T15, T20, & T25 Regular and Ballpoint Drivers
9. Flashlight
10. 23-Piece Inch Socket Set 1/4 - 3/8" Drive
11. .005, .007, & .010 Feeler Gauges
12. 6 1/4" Straight Hemostats
13. 6 1/4" Curved Hemostats
14. 3-10mm & 10-25mm Heavy Duty Straight Fixed Tip Snap Ring Pliers
15. 5 1/2" Long Nose Pliers
16. 6" Vise-Grip Locking Pliers, Long Nose

# 5.3 Rear Cover & Cooling Fan

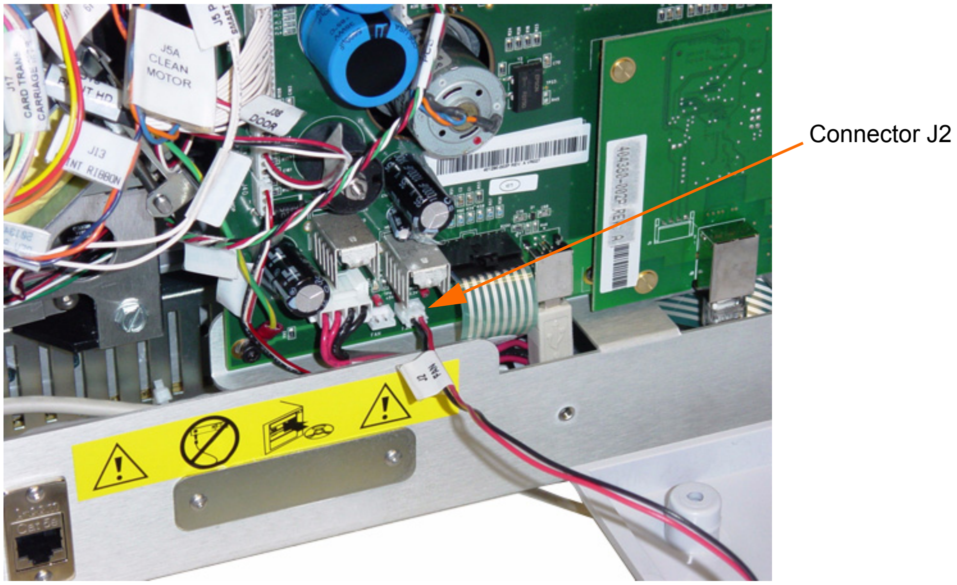
**Step 1.** With a Phillips #2 screwdriver, remove the seven screws holding the Rear Cover in place. Note that the orange arrows point out the seven screws.



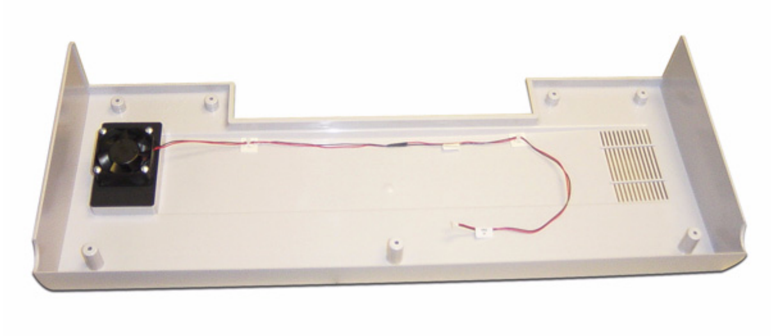
**Step 2.** Set the Rear Cover, face down, on the table top.



**Step 3.** Disconnect the Cooling Fan plug from connector J2 on the Main PCBA.



**Step 4.** Remove the Rear Cover.



**Step 5.** With a Phillips #1 screwdriver, remove the four screws holding the Cooling Fan in place.

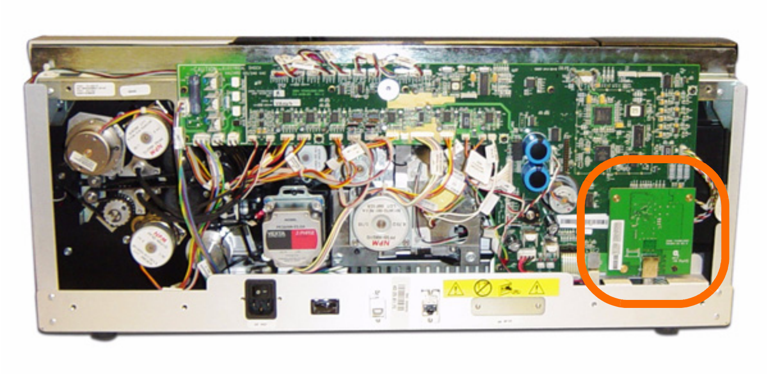
**Step 6.** Cut the cable ties, as required, to free the Cooling Fan cable and connector.

**Step 7.** Remove the Cooling Fan.

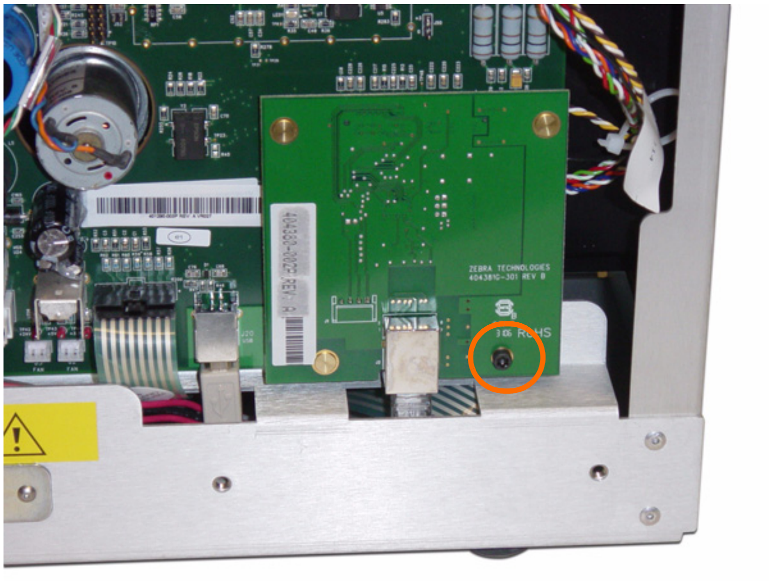
# 5.4 Ethernet PCBA

**Note** • The Ethernet PCB is only installed if you have the Ethernet option.

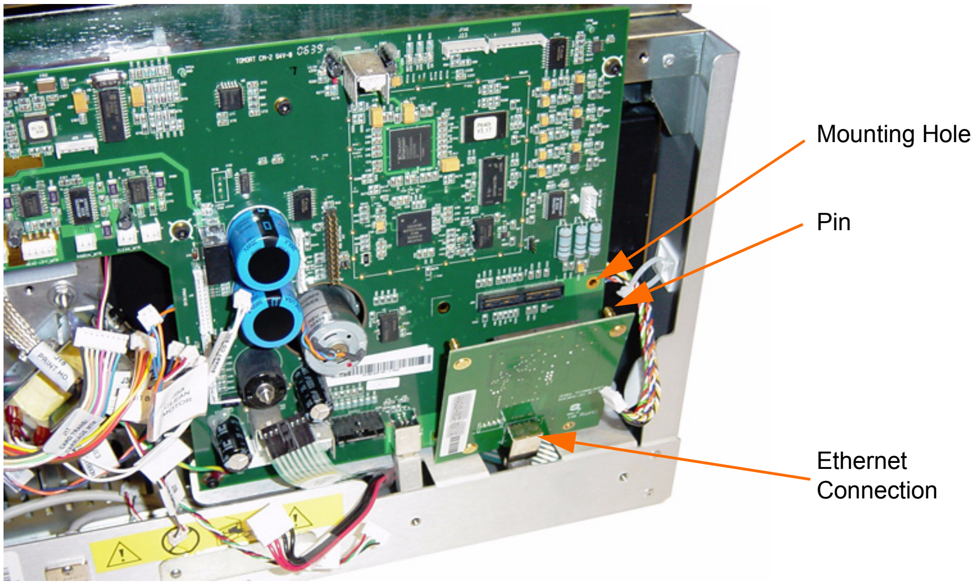
**Step 1.** Locate the Ethernet PCBA.



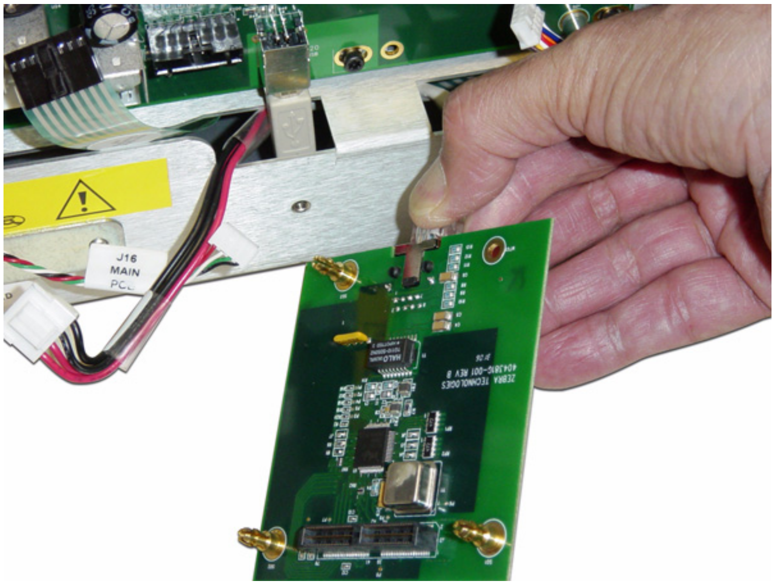
**Step 2.** With a TORX T15 driver, remove the screw from the bottom right-hand corner of the Ethernet PCBA.



**Step 3.** "Pop" the three pins on the Ethernet PCBA out of the mounting holes on the Main PCBA.



**Step 4.** Pull the Ethernet PCBA away from the Main PCBA to access the Ethernet connection. Note that the PCBA is connected to the Ethernet cable.



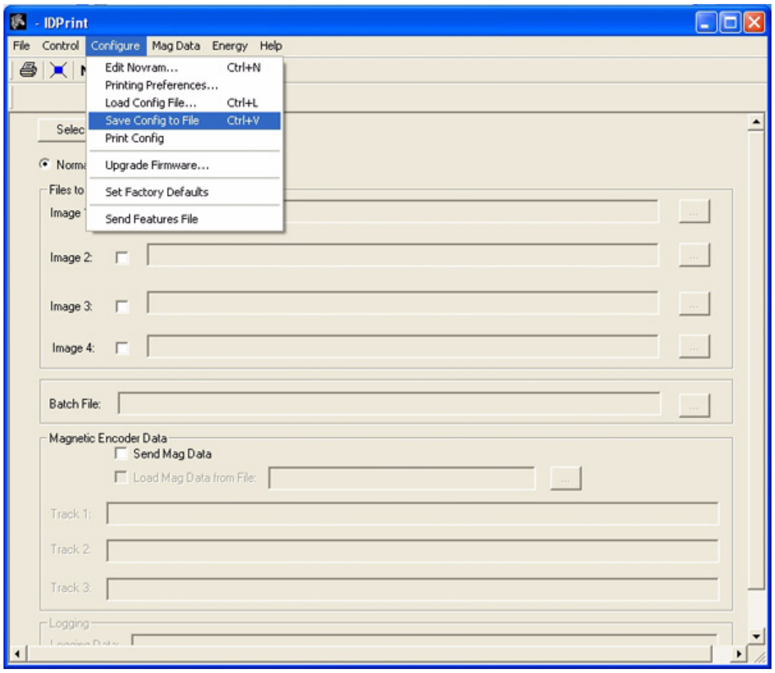
**Step 5.** Remove the Ethernet PCBA.

# 5.5 Main PCBA

**Important • Save the Printer's Configuration --** to do that you need *IDPrint,* and follow the steps below.

**a.** Run the IDPrint.exe program.

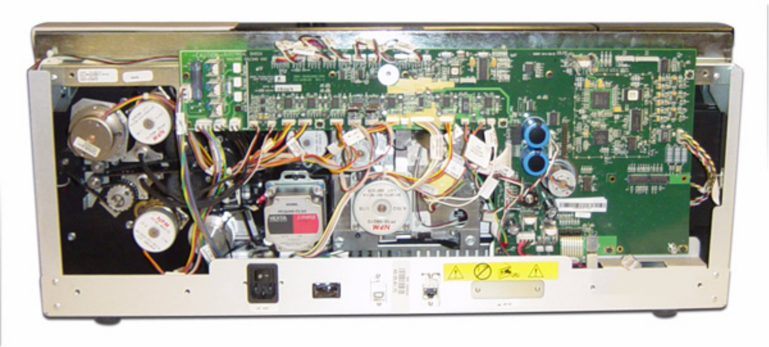
**b.** From the IDPrint Main Menu, select *Configure > Save Config to File*.


- IDPrint
File
Control
Configure
Mag Data
Energy
Help
Edit Novram... Ctrl+N
Printing Preferences...
Load Config File... Ctrl+L
Save Config to File Ctrl+V
Print Config
Upgrade Firmware...
Set Factory Defaults
Send Features File
Image 2:
Image 3:
Image 4:
Batch File:
Magnetic Encoder Data
Send Mag Data
Load Mag Data from File:
Track 1:
Track 2:
Track 3:
Logging

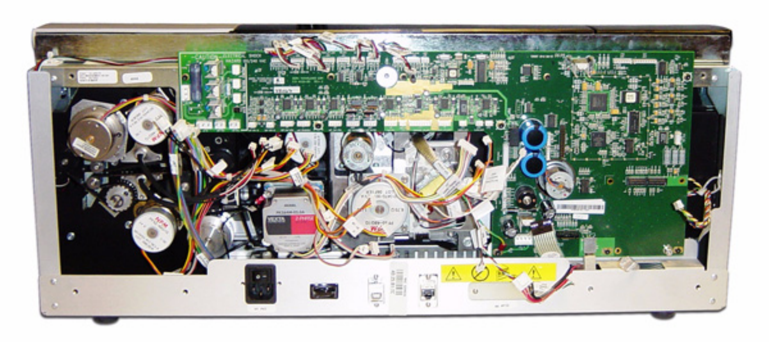
**c.** This saved configuration information will be used to update your replacement Main PCBA.

## 5.5.1 Removal

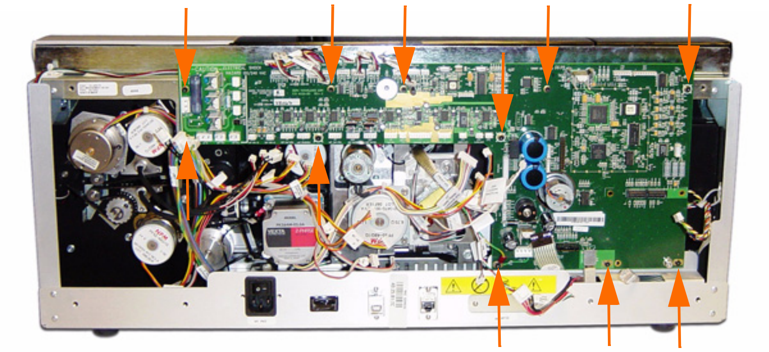
**Step 1.** With the Rear Cover and the Ethernet PCBA removed, the Main PCBA is visible and accessible.



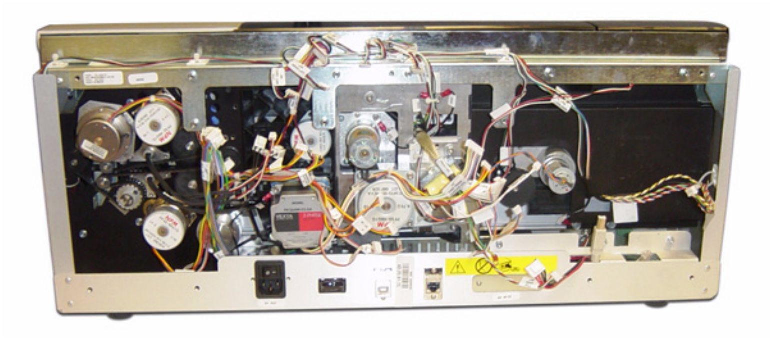
**Step 2.** Carefully disconnect the various wires and connectors that attach to the Main PCBA.



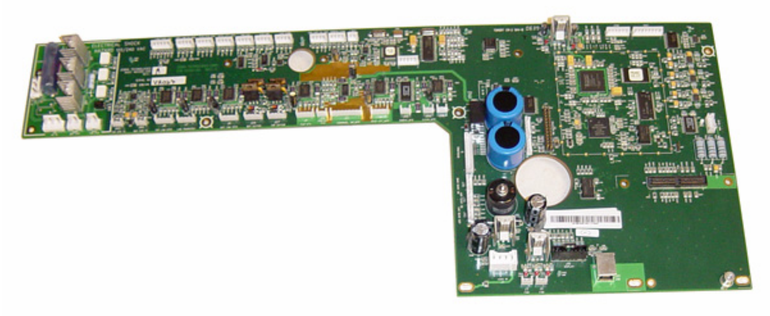
**Step 3.** With a TORX T15 driver, remove the eleven screws holding the Main PCBA in place. Note that the orange arrows point out the eleven PCBA mounting screws.



**Step 4.** With the Main PCBA removed, the view from the back of the printer looks like the following picture.

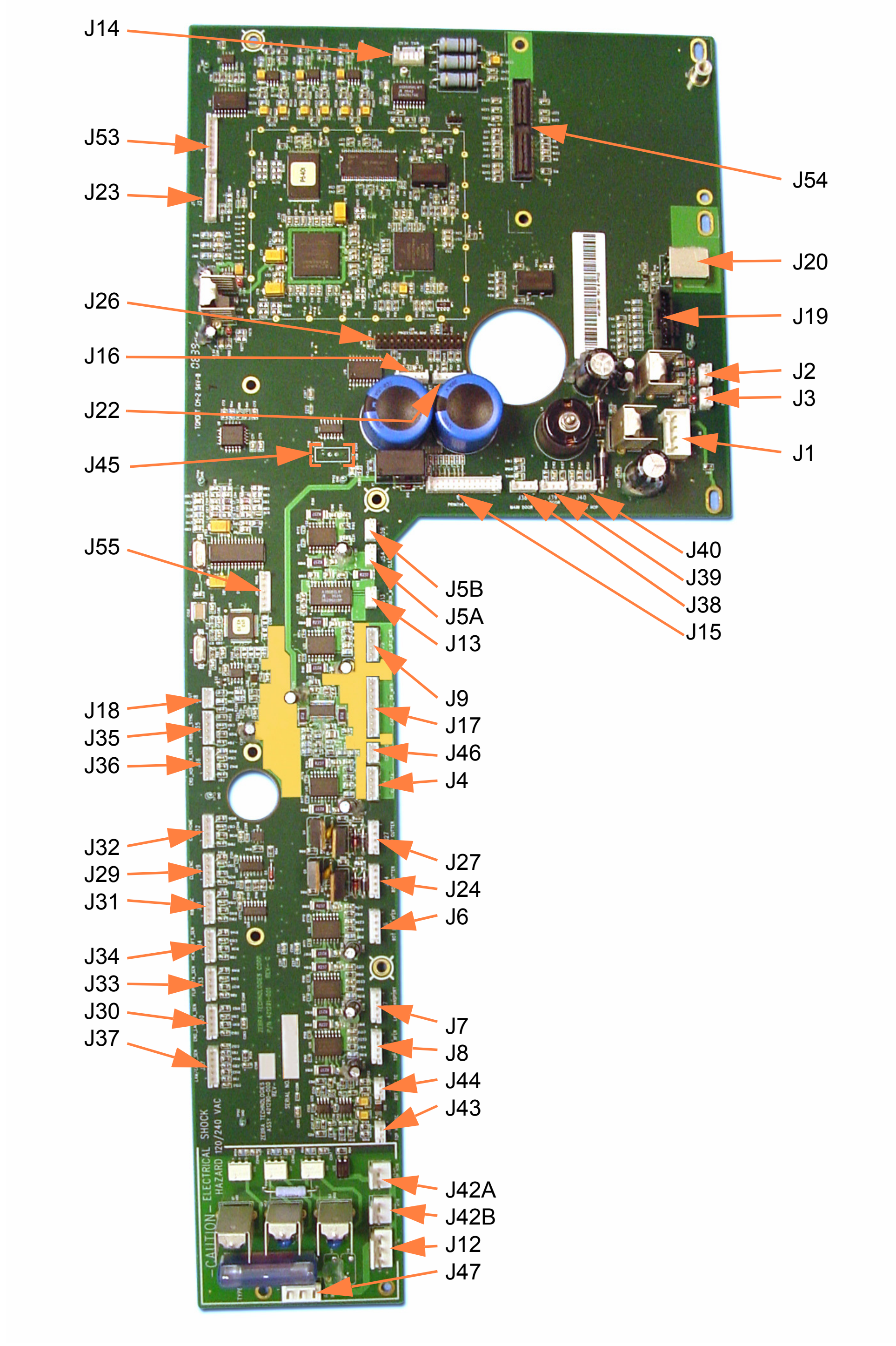


**Step 5.** Set the Main PCBA aside.



**Step 6.** The following figure and table show the connections to the Main PCBA.

## Main PCBA Connections


J14
J53
J23
J26
J16
J22
J45
J55
J18
J35
J36
J32
J29
J31
J34
J33
J30
J37
J54
J20
J19
J2
J3
J1
J40
J39
J38
J15
J5B
J5A
J13
J9
J17
J46
J4
J27
J24
J6
J7
J8
J44
J43
J42A
J42B
J12
J47
CAUTION - ELECTRICAL SHOCK HAZARD 120/240 VAC

## Main PCBA Connections

| Connector | PCBA ID | Cable ID Tag |
|---|---|---|
| J1 | +24V IN | 24V POWER |
| J2 | FAN | FAN |
| J3 | FAN | FAN |
| J4 | FLIP STA | FLIP STATION |
| J5A | CLEAN_MTR | CLEAN MOTOR |
| J5B | (no ident) | ( Contact Smart Card Option ) |
| J6 | BOT LAM XFER | BOT LAM |
| J7 | LAM TRANSPORT | LAM CARD TRANSFER |
| J8 | TOP LAM XFER | TOP LAM |
| J9 | HEAD LIFT_MTR | HEAD LIFT |
| J12 | AC IN | AC IN |
| J13 | RIBBON_MTR | PRINT RIBBON |
| J14 | MAG HEAD | ( Magnetic Encoder Option ) |
| J15 | PRINTHEAD | PRINT HEAD |
| J16 | UART | ( Contact Smart Card Option ) |
| J17 | CARRIAGE_DR_MTR | CARD TRANS / CARRIAGE MTR |
| J18 | I-BUT | ( ID Key Security Option ) |
| J19 | DISPLAY | CONTROL PAD |
| J20 | USB | ( USB Connector ) |
| J22 | UART | ( Barcode Reader Option ) |
| J23 | JTAG | ( Test Connector ) |
| J24 | BOT CUTTER | BOTTOM |
| J26 | PROCESSOR BDM | ( Test Connector ) |
| J27 | TOP CUTTER | TOP |
| J29 | CLN_ENC | CLEAN ENCODER |
| J30 | CRD_LAM_EX_SEN | LAM CARD EXIT |
| J31 | RIB_ENC | RIBBON ENCODER |
| J32 | CAR HOME | CARRIAGE HOME |
| J33 | FLIP_STA_SEN | FLIP STATION |
| J34 | HEAD_LIFT_SEN | HEAD LIFT |
| J35 | RIBBON_SYNC | RIBBON SYNC |
| J36 | CRD_HOP_EX_SEN | CARD HPR EXIT SENSOR |
| J37 | LAM/CRD_SEN | LAM SENSOR |
| J38 | MAIN DOOR SW | DOOR OPEN |
| J39 | HOP DOOR SW | HOP OPEN |
| J40 | CAR NEAR HOP | CAR NEAR |
| J42A | TOP HTR | ( Top Heater ) |
| J42B | BOT HTR | ( Bottom Heater ) |
| J43 | TOP HTR TC | ( Top Heater ) |
| J44 | BOT HTR TC | ( Bottom Heater ) |
| J45 | RFID | (RFID Flex Cable) |
| J46 | CONTAC STA | ( Contact Station Option ) |
| J47 | AC IN | AC OUT |
| J53 | TEST | ( Test Connector ) |
| J54 | (no ident) | ( Ethernet Option ) |
| J55 | PROG | ( Test Connector ) |

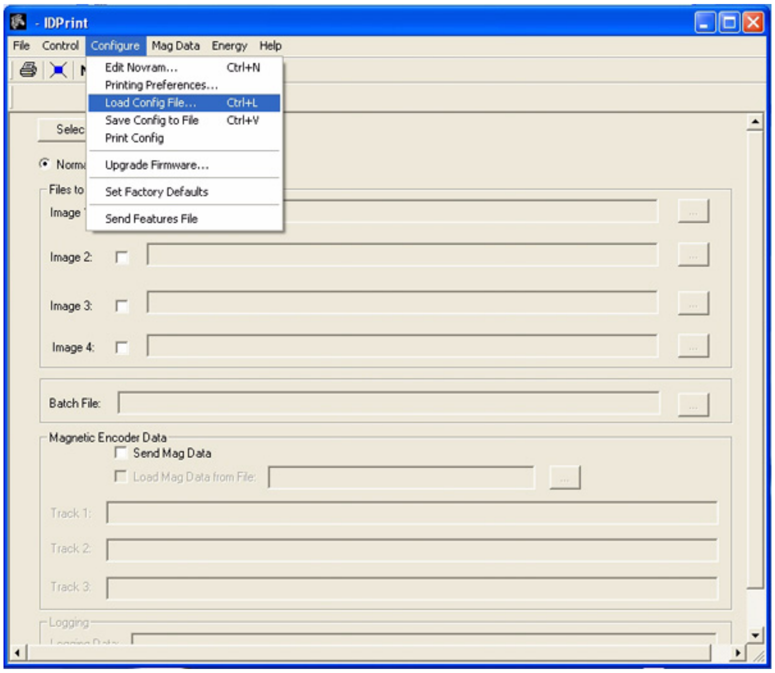
## 5.5.2 Tests and Adjustments

### 5.5.2.1 Reload The Configuration Information

After changing the Main PCBA, reload the configuration information (saved in at the beginning of this procedure) into the printer.

**Step 1.** Run the IDPrint.exe program.

**Step 2.** From the IDPrint Main Menu, select *Configure* > *Load Config File.*


- IDPrint
File
Control
Configure
Mag Data
Energy
Help
Edit Novram... Ctrl+N
Printing Preferences...
Load Config File... Ctrl+L
Save Config to File Ctrl+V
Print Config
Upgrade Firmware...
Set Factory Defaults
Send Features File
Selec
Norm
Files to
Image
Image 2:
Image 3:
Image 4:
Batch File:
Magnetic Encoder Data
Send Mag Data
Load Mag Data from File:
Track 1:
Track 2:
Track 3:
Logging

**Step 3.** This saved configuration information will update your replacement Main PCBA.

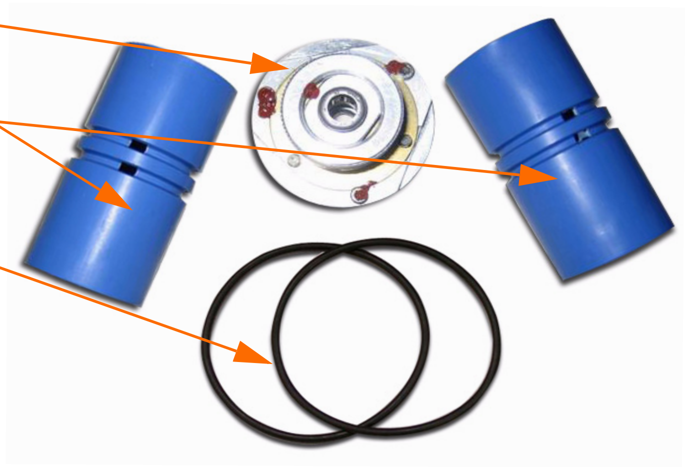
### 5.5.2.2 Adjust Ribbon Torque

The Main PCBA needs to “learn” the amount of voltage required to run the ribbon drive motor. To do this, you need to perform the Ribbon Torque Adjustment Procedure.

To perform the procedure ensure you have a Clutch Burn-In Tool Kit, a 7/16” nut driver, and the **IDPrint** test and adjustment program.

The Clutch Burn-In Tool Kit, P/N: 105927-430, consists of:

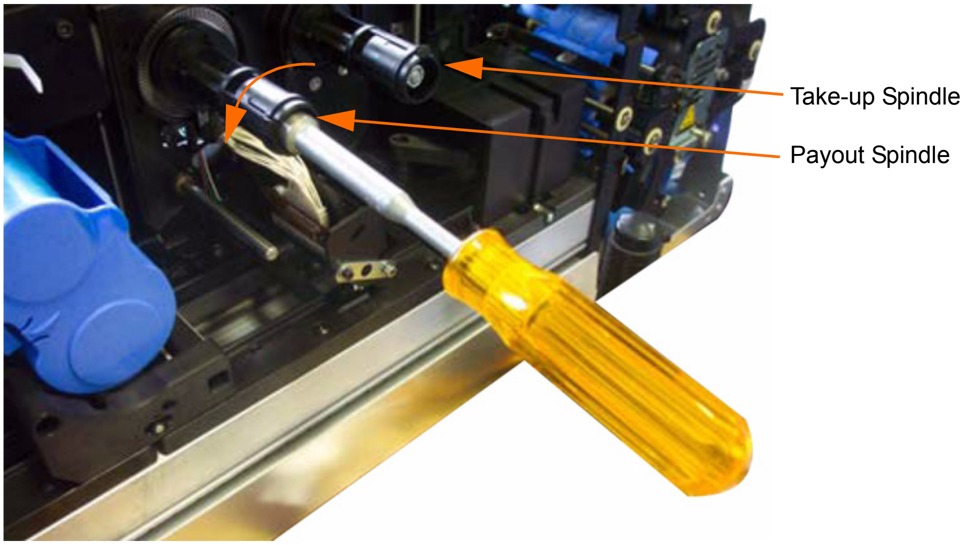
- Clutch Pulley Assembly
- Grooved Splined Cores (2)
- O-rings (2)



**Step 1. Find Low Ribbon Torque.**

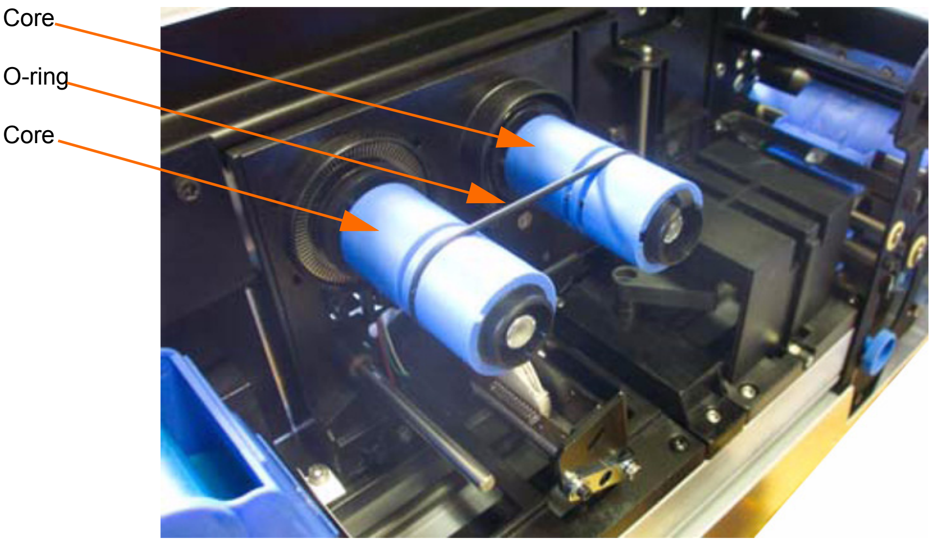
**a.** Remove the Ribbon.

**b.** Loosen the payout spindle nut until the Payout Spindle rotates freely.



**c.** Ensure that there is very little end-to-end play (detent) in the Take-up Spindle; adjust the take-up spindle nut as required.

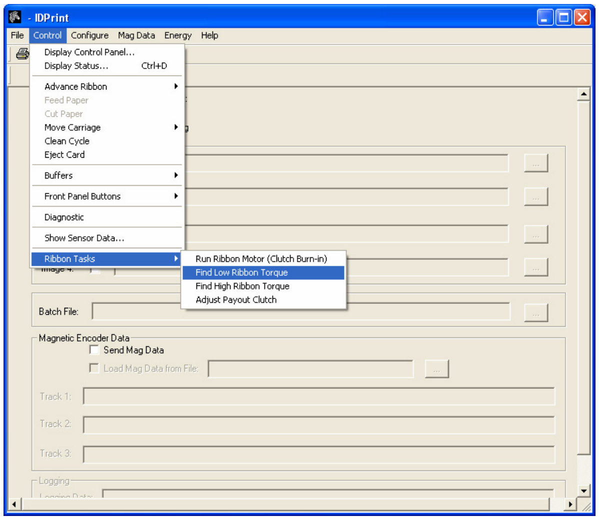
**d.** Install the two Grooved Splined Cores.


Core
O-ring
Core

**e.** Install the one of the O-ring in the front slots on the two cores.

**f.** Start IDPrint.

**g.** Select *Control* > *Ribbon Tasks* > *Find Low Ribbon Torque*:

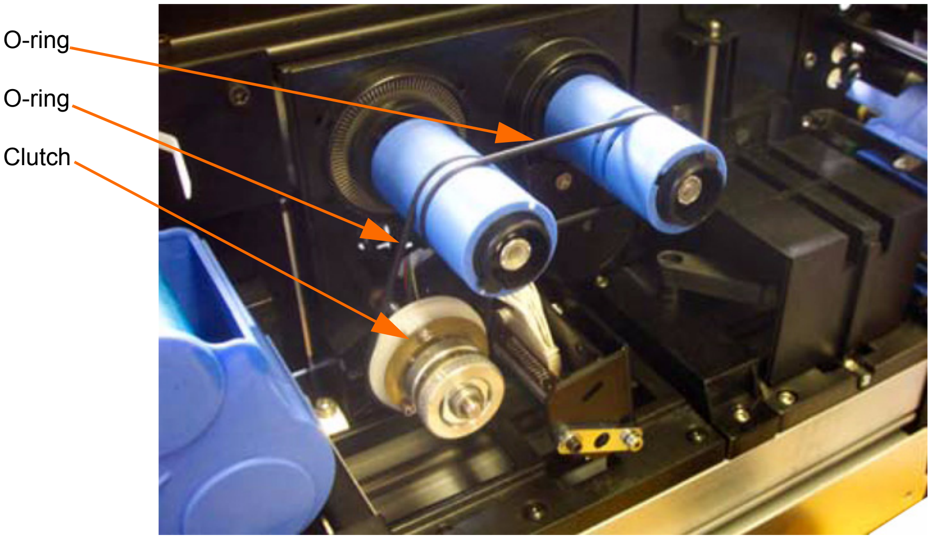

- IDPrint
File
Control
Configure
Mag Data
Energy
Help
Display Control Panel...
Display Status... Ctrl+D
Advance Ribbon
Feed Paper
Cut Paper
Move Carriage
Clean Cycle
Eject Card
Buffers
Front Panel Buttons
Diagnostic
Show Sensor Data...
Ribbon Tasks
Run Ribbon Motor (Clutch Burn-in)
Find Low Ribbon Torque
Find High Ribbon Torque
Adjust Payout Clutch
Batch File:
Magnetic Encoder Data
☐ Send Mag Data
☐ Load Mag Data from File:
Track 1:
Track 2:
Track 3:
Logging

**h.** Observe the two cores rotate counterclockwise for approximately two minutes.

**i.** When the motor stops turning, go to the next step.

### Step 2. Find High Ribbon Torque

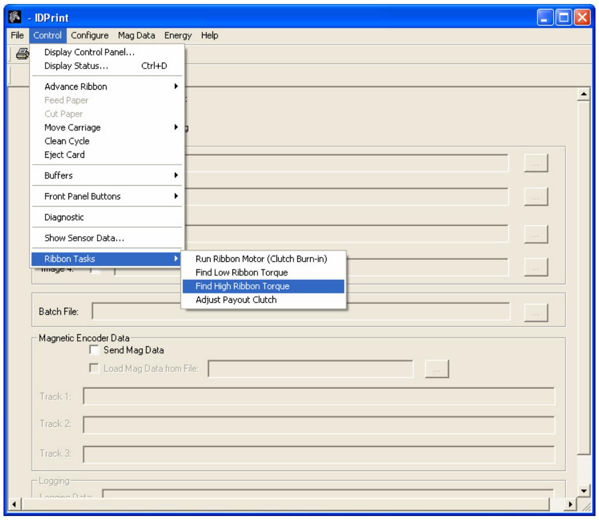
**a.** Place the Clutch onto the Guide Shaft. Note that you may have to move the Printhead down to access the Guide Shaft.


O-ring
O-ring
Clutch

**b.** Place one O-ring around the Clutch (in the rear slot) and around the left core (in the rear slot).

**c.** Install the other O-ring in the front slots on the two cores.

**d.** From the IDPrint screen, select *Control* > *Ribbon* Tasks > *Find High Ribbon Torque*:


- IDPrint
File
Control
Configure
Mag Data
Energy
Help
Display Control Panel...
Display Status... Ctrl+D
Advance Ribbon
Feed Paper
Cut Paper
Move Carriage
Clean Cycle
Eject Card
Buffers
Front Panel Buttons
Diagnostic
Show Sensor Data...
Ribbon Tasks
Run Ribbon Motor (Clutch Burn-in)
Find Low Ribbon Torque
Find High Ribbon Torque
Adjust Payout Clutch
Batch File:
Magnetic Encoder Data
☐ Send Mag Data
☐ Load Mag Data from File:
Track 1:
Track 2:
Track 3:
Logging

**e.** Observe the two cores rotate counterclockwise for approximately two minutes.

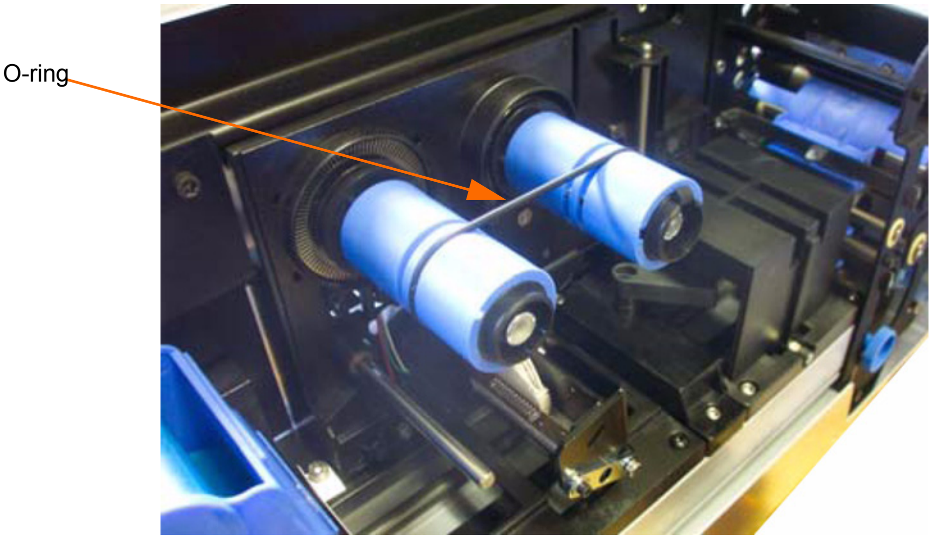
**f.** When the motor stops turning, go to the next step.

### Step 3. Run Ribbon Motor (Clutch Burn-In)

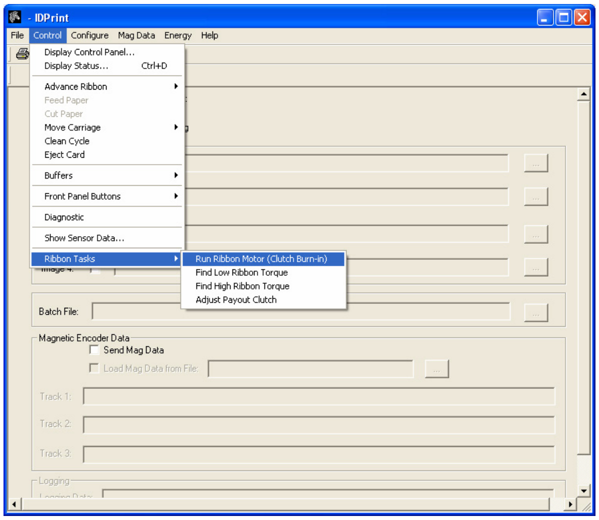
**a.** Remove the O-ring in the front slots on the cores.

**b.** Remove the Clutch and associated O-ring.

**c.** Reinstall an O-ring in the front slots on the two cores.

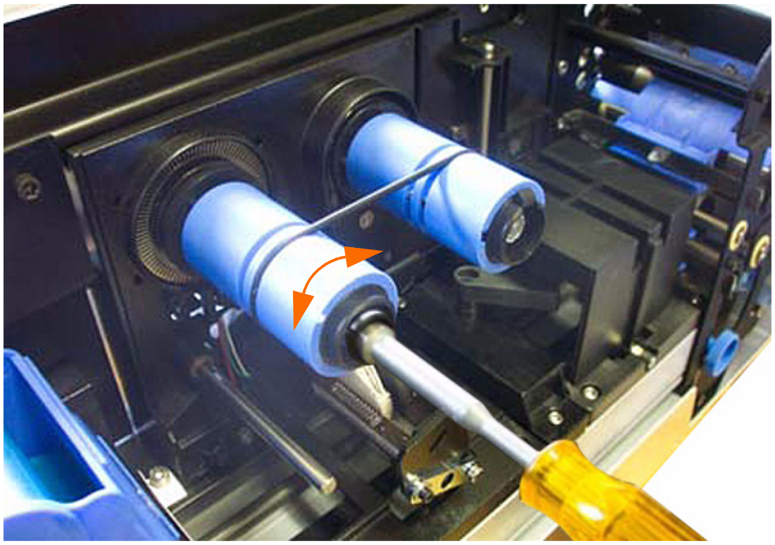


**d.** From the IDPrint screen, select *Control* > *Ribbon* Tasks > *Run Ribbon Motor (Clutch Burn-In)*:


- IDPrint
File
Control
Configure
Mag Data
Energy
Help
Display Control Panel...
Display Status... Ctrl+D
Advance Ribbon
Feed Paper
Cut Paper
Move Carriage
Clean Cycle
Eject Card
Buffers
Front Panel Buttons
Diagnostic
Show Sensor Data...
Ribbon Tasks
Run Ribbon Motor (Clutch Burn-in)
Find Low Ribbon Torque
Find High Ribbon Torque
Adjust Payout Clutch
Batch File:
Magnetic Encoder Data
☐ Send Mag Data
☐ Load Mag Data from File:
Track 1:
Track 2:
Track 3:
Logging

**e.** Observe the two cores rotate counterclockwise.

**f.** Tighten the payout spindle nut until the O-ring bows, then back off slightly.



**g.** Listen to the “hum” of the motor.

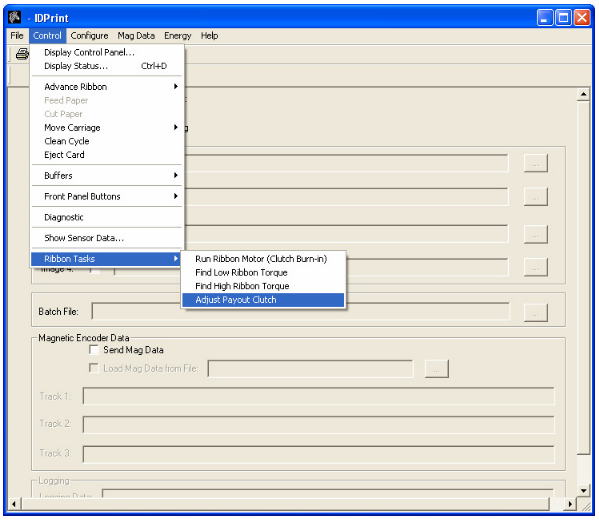
**h.** Adjust the tightness of the payout spindle nut until the motor hum is constant.

**i.** This test takes approximately ten minutes. When the motor stops turning, go to the next step.

### Step 4. Adjust Payout Clutch

**Note •** You may need to repeat this step until you are satisfied with the adjustment.

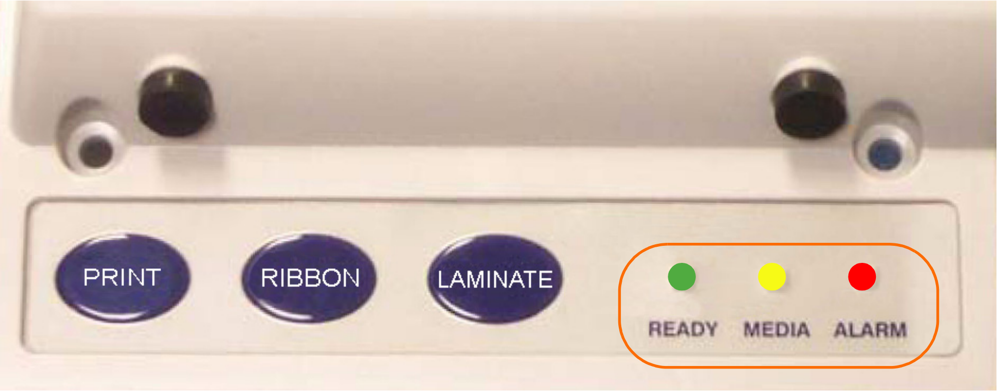
**a.** From the IDPrint screen, select *Control* > *Ribbon* Tasks > *Adjust Payout Clutch:*


- IDPrint
File
Control
Configure
Mag Data
Energy
Help
Display Control Panel...
Display Status... Ctrl+D
Advance Ribbon
Feed Paper
Cut Paper
Move Carriage
Clean Cycle
Eject Card
Buffers
Front Panel Buttons
Diagnostic
Show Sensor Data...
Ribbon Tasks
Run Ribbon Motor (Clutch Burn-in)
Find Low Ribbon Torque
Find High Ribbon Torque
Adjust Payout Clutch
Batch File:
Magnetic Encoder Data
☐ Send Mag Data
☐ Load Mag Data from File:
Track 1:
Track 2:
Track 3:
Logging

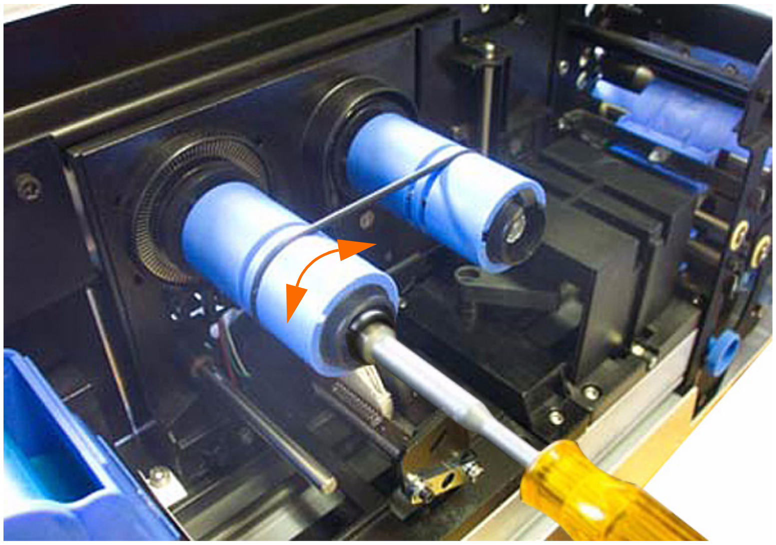
**b.** Observe the two cores rotate counterclockwise.

**c.** Observe the panel lights.

**Note •** The panel lights should flash an equal amount of time between Green (Ready) and Red (Alarm) -- the optimum condition would be Yellow (Media) on all the time.



**d.** Adjust the payout spindle nut as required -- if Red, tighten; if Green, loosen.



**e.** When the motor stops turning and you are satisfied with the adjustment, go to the next step.

**Step 5.** Remove the O-ring and the two Grooved Splined Cores.

**Step 6.** Re-load the Ribbon.

**Step 7.** Power Cycle the Printer.

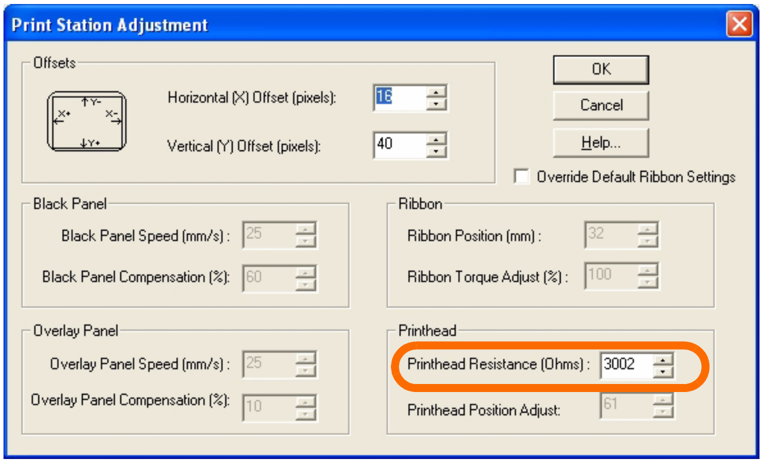
### 5.5.2.3 Printhead Resistance

**Step 8.** After changing the Main PCBA, go into the **Printer Driver;** and enter the Printhead resistance.

**a.** Select *Start* > *Printers and Faxes,* right click the *Zebra Card Printer,* and select *Properties* from the pop-up menu.

**b.** From the Card Printer Properties screen, select *Device Settings* > *Printer Adjustment* > *Print Station Adjust...*

**c.** In the **Printhead Resistance (Ohms)** field, enter the resistance of the Printhead. This number is located on the label applied to each Printhead.



Print Station Adjustment

Offsets
Horizontal (X) Offset (pixels): 16
Vertical (Y) Offset (pixels): 40

☐ Override Default Ribbon Settings

Black Panel
Black Panel Speed (mm/s) : 25
Black Panel Compensation (%): 60

Ribbon
Ribbon Position (mm) : 32
Ribbon Torque Adjust (%) : 100

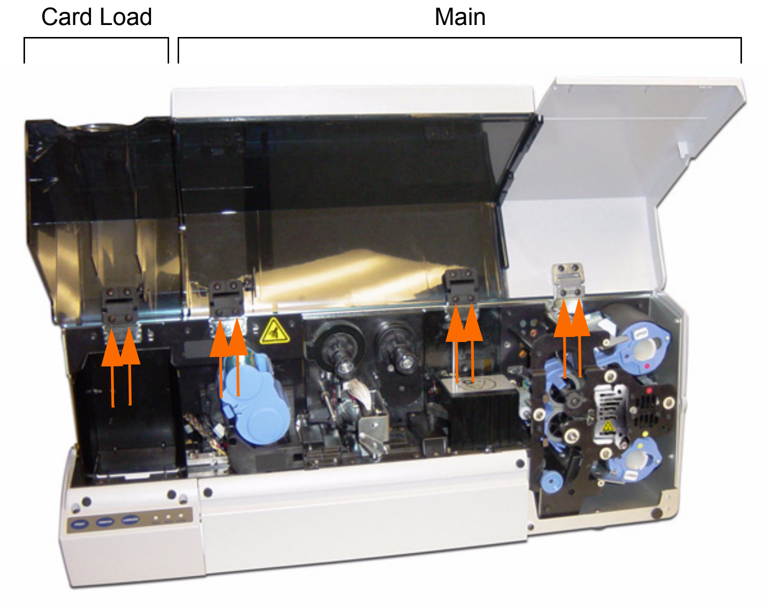
Overlay Panel
Overlay Panel Speed (mm/s) : 25
Overlay Panel Compensation (%): 10

Printhead
Printhead Resistance (Ohms) : 3002
Printhead Position Adjust: 61

The Printhead resistance is also written on the inspection report shipped with each printer.

# 5.6 Doors (Main and Card Load)

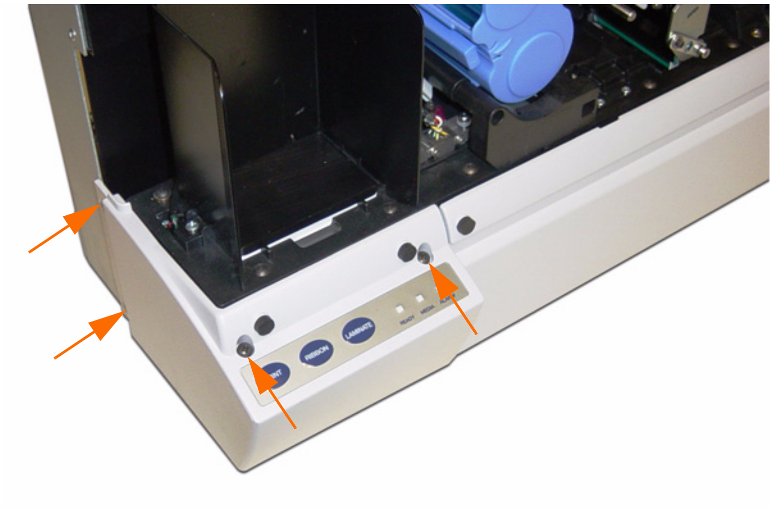
**Step 1.** With a Phillips #1 screwdriver, remove the eight screws holding the Main Door and the Card Load Door in place. Note that the orange arrows point out the eight screws.



**Step 2.** Remove the two Doors.

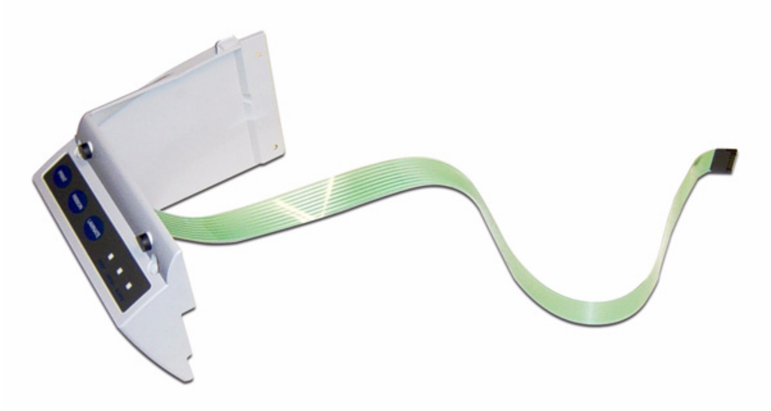
# 5.7 Front Panel Switch Assembly

**Step 1.** With a Phillips #1 screwdriver, remove the two left-side screws and two front-mounting screws holding the Front Panel Switch Assembly in place. Note that the orange arrows point out the four screws.



**Step 2.** If not already disconnected, remove the DISPLAY Connector from J19 on the Main PCBA.

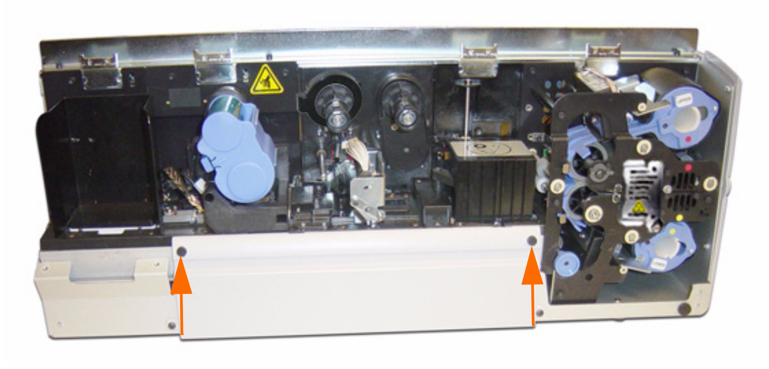
**Step 3.** Remove the Front Panel Switch Assembly.



# 5.8 Lower Front Panel

**Note •** The Front Panel Switch Assembly must be removed to access the left-side screw.

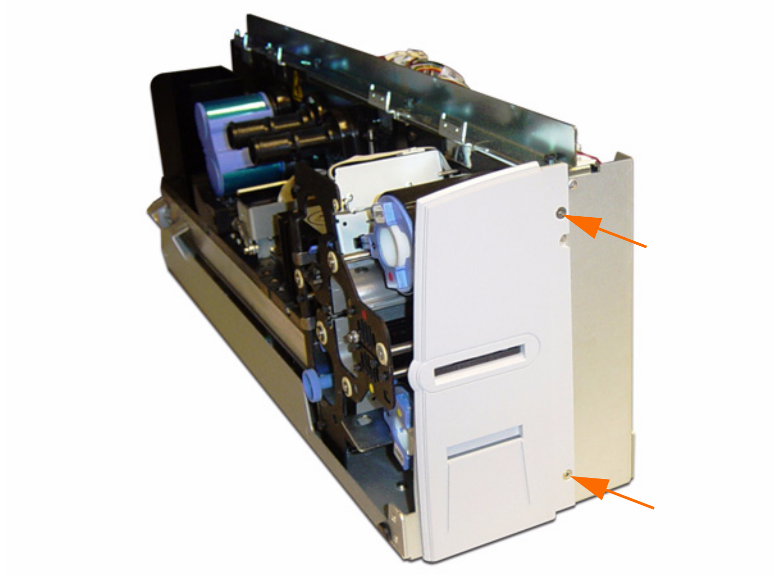
**Step 1.** With a Phillips #1 screwdriver, remove the two screws holding the Lower Front Panel in place. Note that the orange arrows point out the two screws.



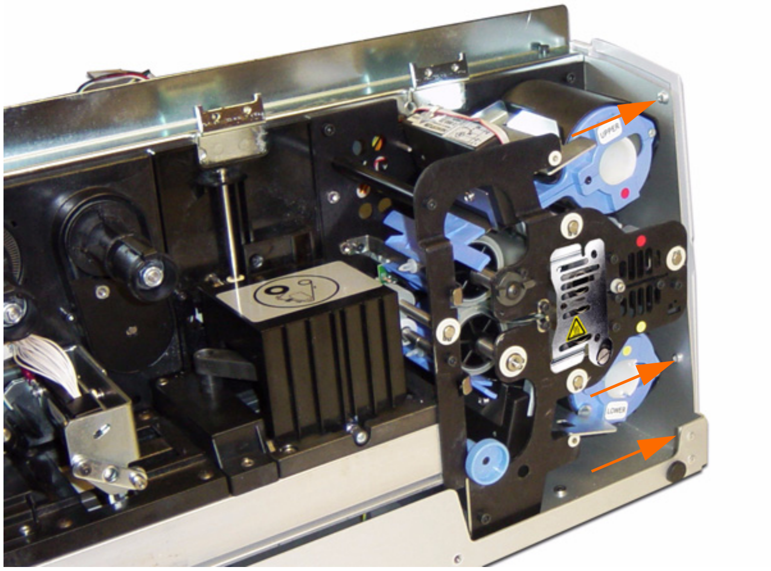
**Step 2.** Remove the Lower Front Panel.

# 5.9 End Panel (Right-Side)

**Step 1.** With a Phillips #1 screwdriver, remove the two *outside* screws holding the End Panel in place. Note that the orange arrows point out the two screws.



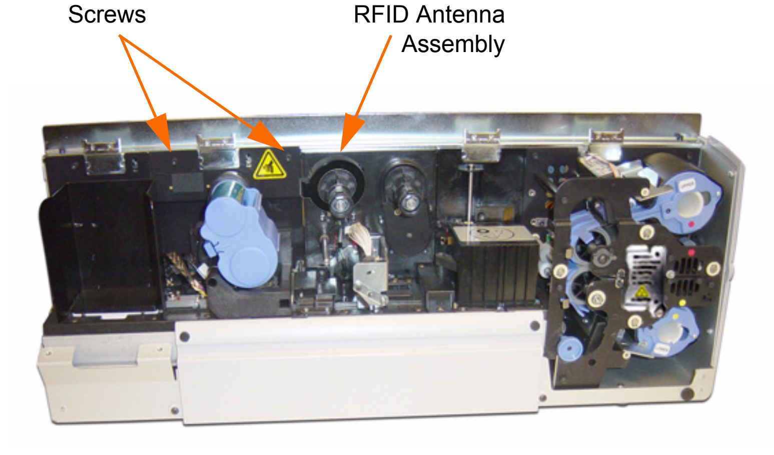
**Step 2.** With a Phillips #1 screwdriver, remove the three *inside* screws holding the End Panel in place. Note that the orange arrows point out the three screws



**Step 3.** Remove the End Panel.

# 5.10 RFID Antenna Assembly

**Step 1.** Locate the RFID Antenna Assembly (Antenna Cover and Antenna Flex Cable).



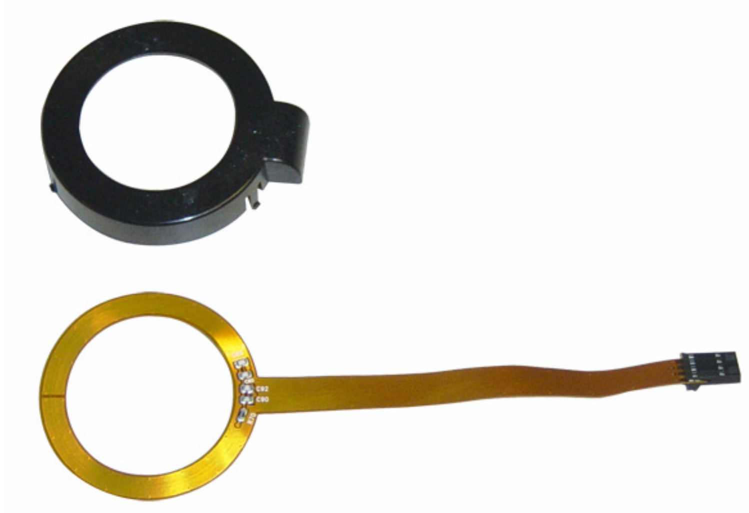
**Step 2.** Remove the Antenna Cover from the Payout Spindle. Note that the Antenna Cover snaps in place.

**Step 3.** Separate the Antenna Flex Cable from the Antenna Cover.

**Step 4.** With a TORX T25 driver, remove the two screws shown in the figure above. This will loosen the cover plate and provide enough clearance to slide the Antenna Flex Cable out of the Frame.

**Step 5.** If not already disconnected, remove the RFID Connector from J45 on the Main PCBA.

**Step 6.** From the rear of the printer, slide the Antenna Flex Cable out of the Frame.



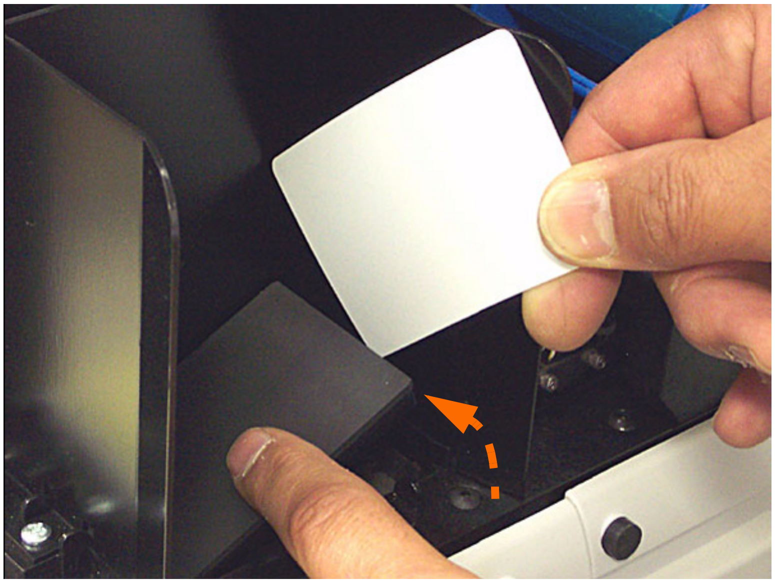
# 5.11 Platen

**Step 1.** Using the Card Transport Knob, move the Truck back to its home position, stopping when the right hand edge of the Platen is even with the right hand inner surface of the Card Input Hopper.

**Step 2.** Push the Platen to the left against its spring.

**Step 3.** Pry the Platen out using a CR-80 card.

**Important** • Do not lose the spring! It holds the platen tight against the right of the truck and is essential for good print registration.

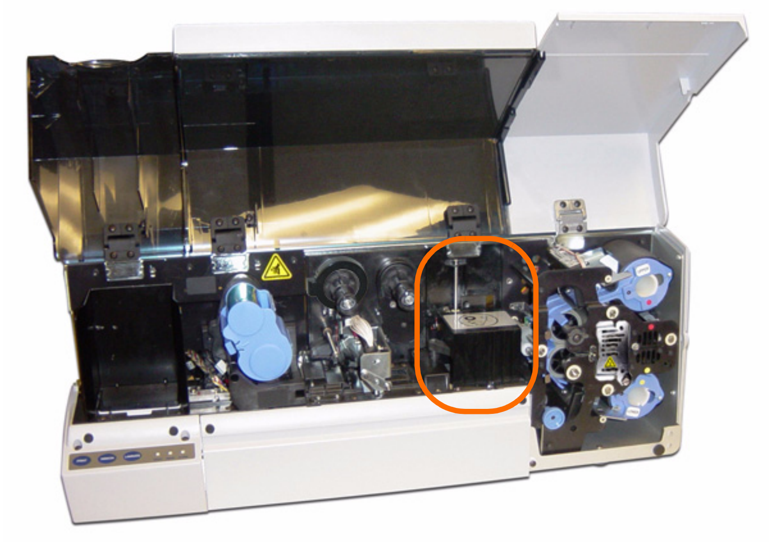


**Step 4.** Remove the Platen.

# 5.12 Flip Station

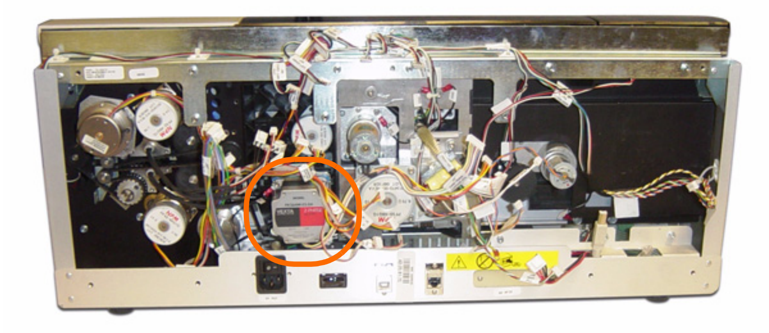
## 5.12.1 Removal

**Step 1.** Locate the Flip Station.

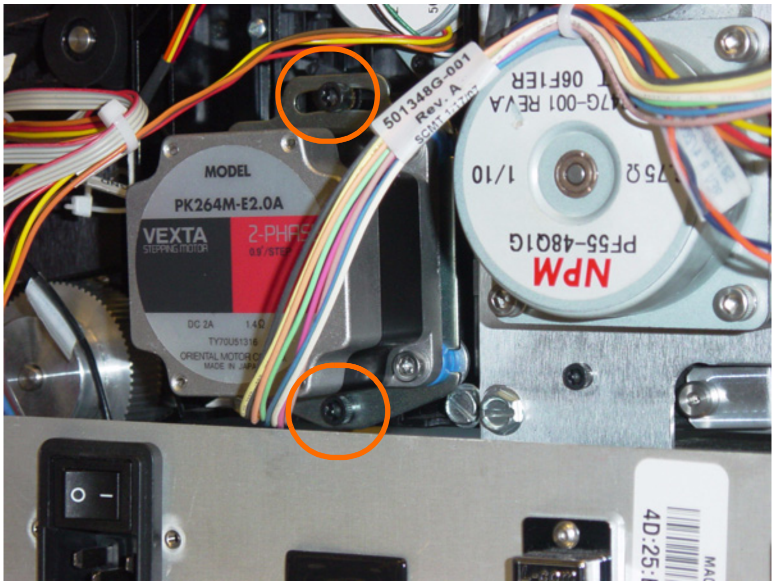


**Step 2.** If not already done, remove the Rear Cover (see Section 5.3) and the Main PCBA (see Section 5.5).

**Step 3.** From the rear of the printer, locate the drive motor.



**Step 4.** With a TORX T25 driver, remove the two screws holding the Drive Motor to the Frame.



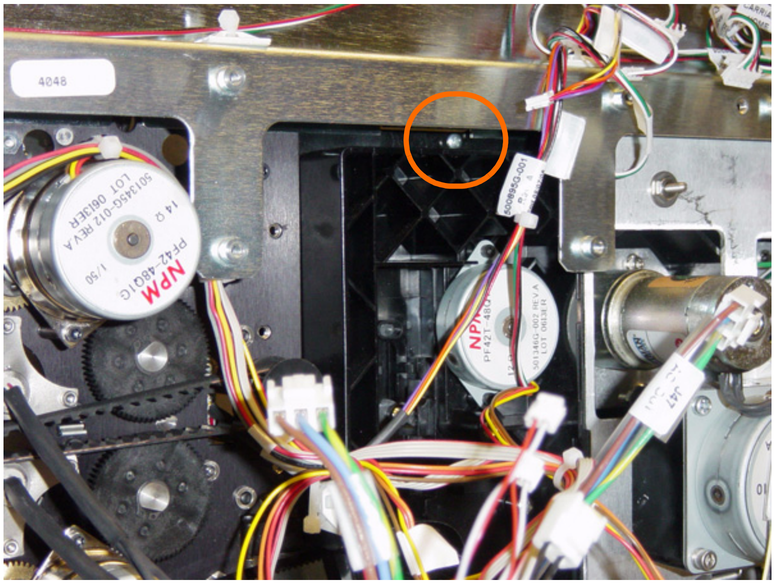
**Step 5.** Cut the associated cable tie(s).

**Step 6.** Disconnect the ground wire.

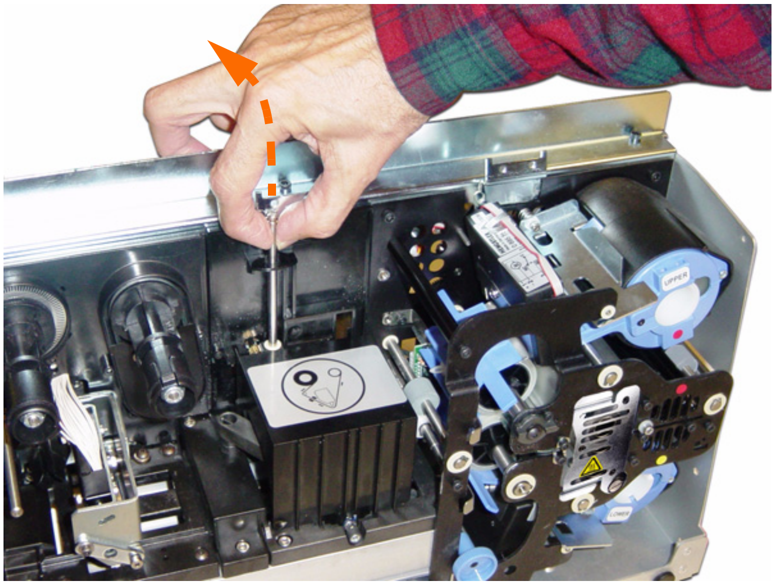
**Step 7.** Remove the drive motor.

**Step 8.** Move the drive belt to the left, out of the way.

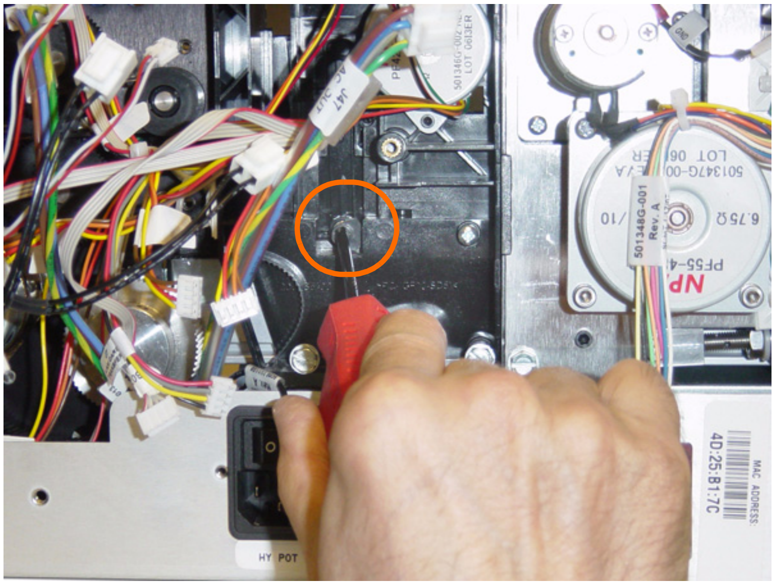
**Step 9.** With a Phillips #0 screwdriver, *loosen* the screw that holds the shaft in place.



**Step 10.** Remove the shaft by pulling it up and out of the Flip Station.

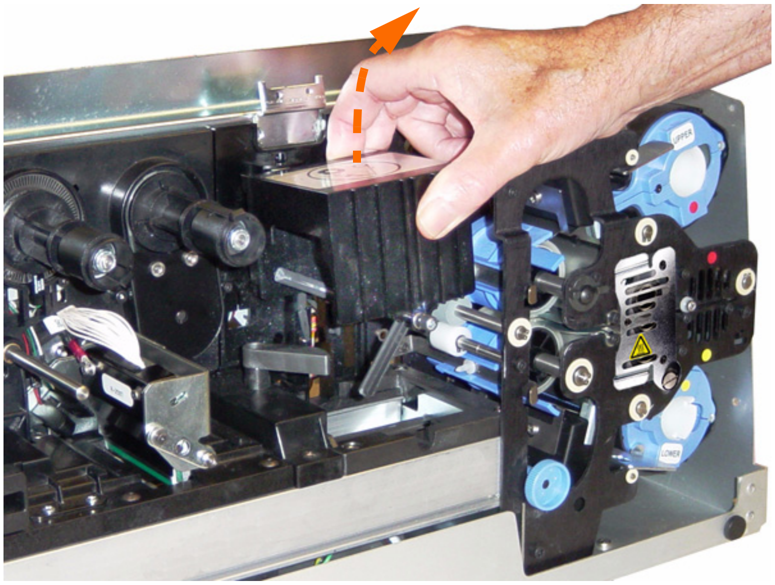


**Step 11.** With a Phillips #0 screwdriver, remove the screw holding the Cam in place.

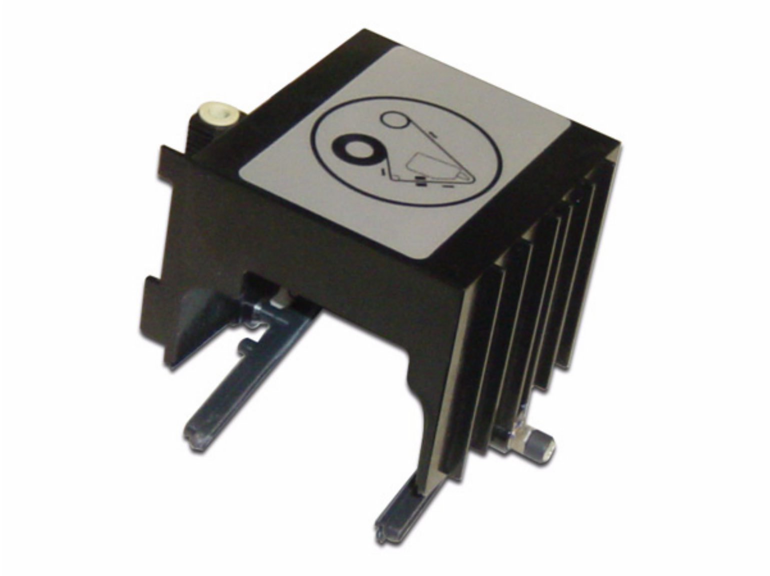


**Step 12.** Remove the Cam and screw.

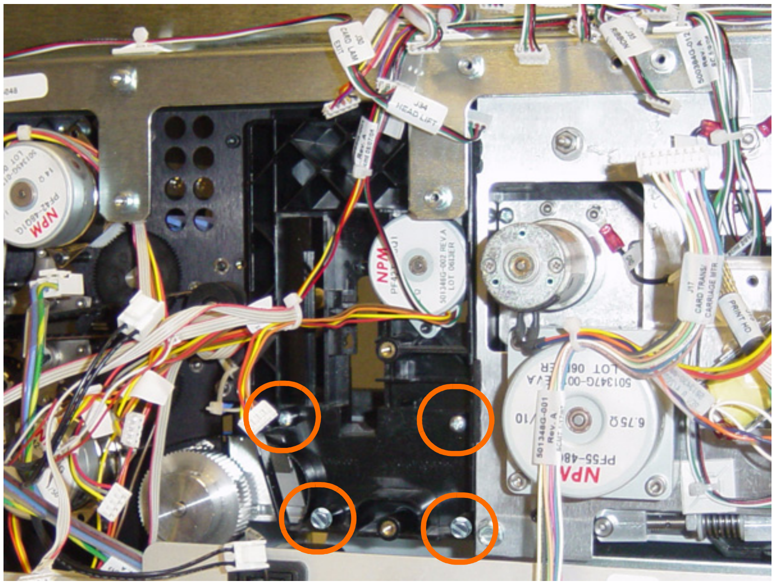
**Step 13.** Slide the entire carrier assembly up (to its highest point) and out of the printer.



**Step 14.** Remove the carrier assembly.



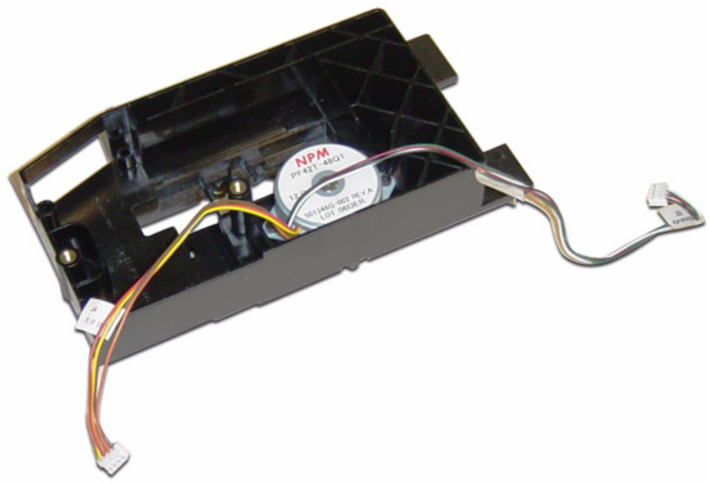
**Step 15.** With a flat-blade screwdriver, remove the lower two 5/16 screws that hold the Backplate to the Frame; refer to figure below.



**Step 16.** With a Phillips #2 screwdriver, remove the upper two screws holding the Backplate to the Front Bezel; refer to figure above.

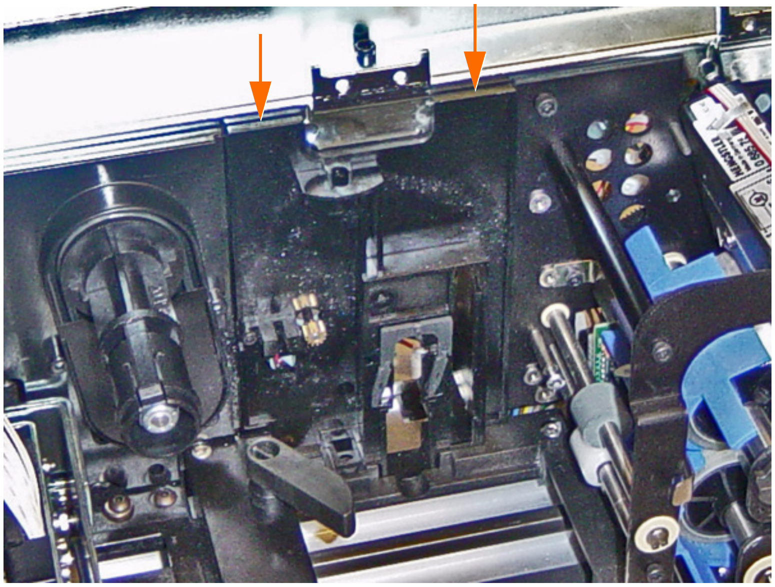
**Step 17.** Cut the cable ties, as required, to free the Backplate.

**Step 18.** Remove the Backplate by pulling it out and down from the printer.



## 5.12.2 Replacement

**Step 19.** From the rear of the printer, install the Backplate by lifting it up and into the printer. Ensure the two tabs at the top of the Backplate are on the outside of the support beam on the front.



**Step 20.** Install (*finger-tight*) the two 5/16 screws that hold the Backplate to the Frame.

**Step 21.** With a Phillips #2 screwdriver, install the two screws holding the Backplate to the Front Bezel.

**Step 22.** With a flat-blade screwdriver, tighten the two 5/16 screws installed in Step 20.

**Note •** For ease of handling, insert a card between the Flip Arms when installing the carrier assembly in the printer.

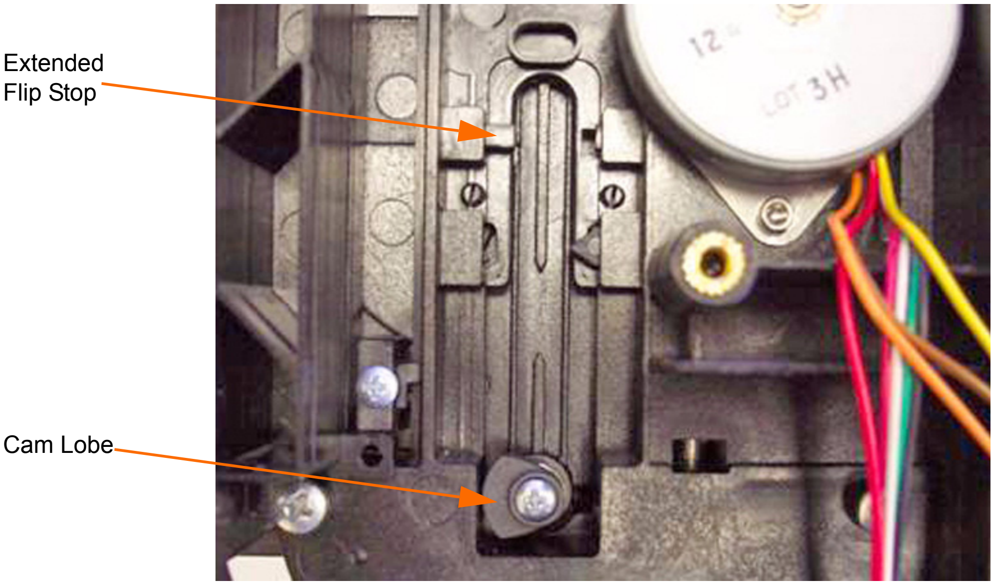
**Step 23.** From its highest point, slide the entire carrier assembly into the printer.

**Step 24.** Slide the shaft into position.

**Step 25.** Slide the carrier assembly down to the Platen.

**Step 26.** With a Phillips #0 screwdriver, tighten the screw that holds the shaft in place. The screw is tightened onto the notch at the top of the shaft -- do not over tighten.

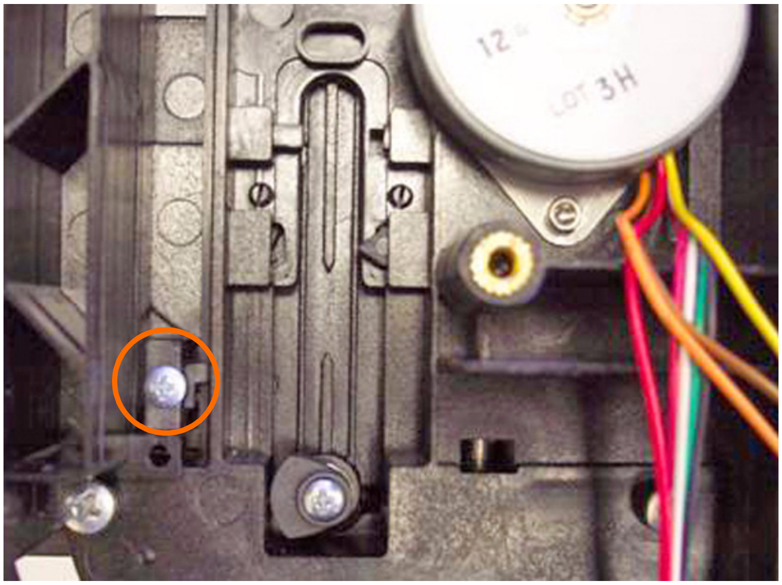
**Step 27.** Position the Cam and Flip Arm. Note that the large side (lobe) of the Cam is on the same side as the extended Flip Stop.



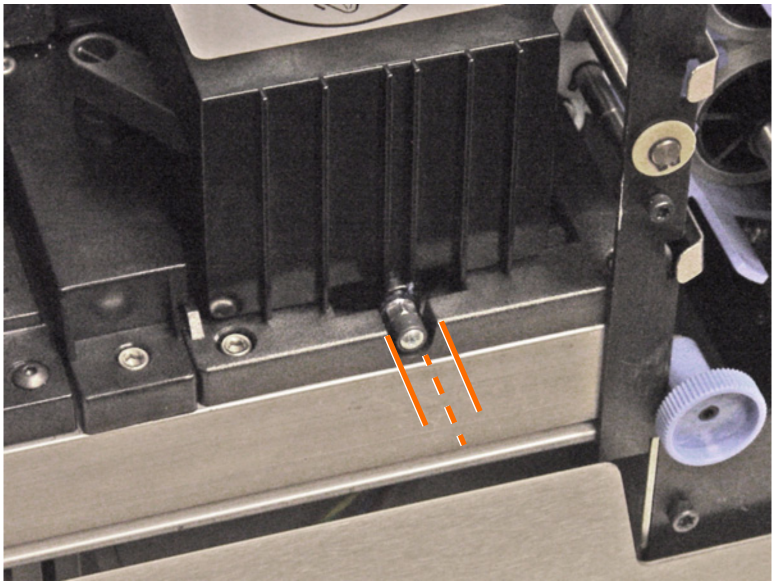
**Step 28.** With a Phillips #0 screwdriver, install the screw holding the Cam and Flip Arm in place.

**Step 29.** Adjust the Azimuth.

**a.** Locate the azimuth adjustment screw.



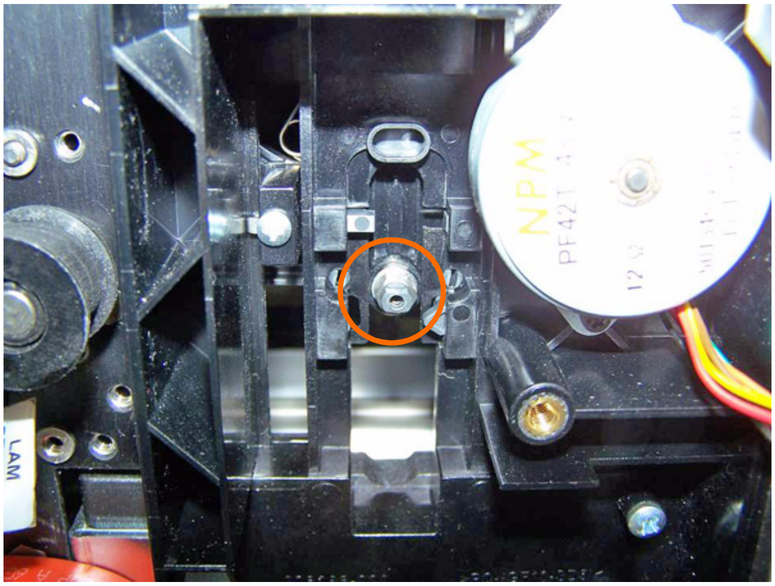
**b.** Adjust the azimuth (via the adjustment screw) until the pin is aligned in the middle of the notch.



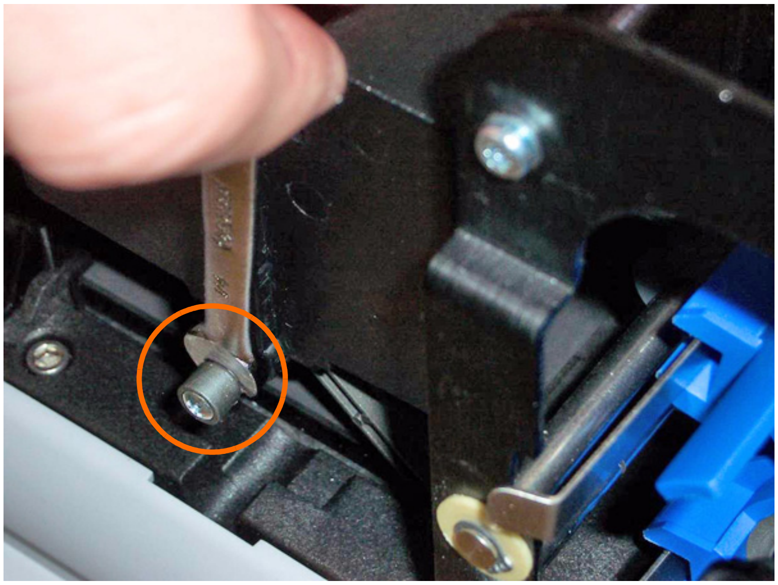
**c.** Lift and lower the carrier assembly to verify position.

**Step 30.** Adjust the Gap.

**a.** With a 1/4” socket, adjust the back Flip Arm until it just misses the Platen.



**b.** With a 1/4” box wrench, adjust the front Flip Arm until it just misses the Platen.



**Step 31.** Install the Drive Motor.

**a.** Set the Drive Motor in place.

**a.** With a TORX T25 driver, lightly tighten the two screws holding the Drive Motor to the Frame.

**b.** Ensure that the drive belt is aligned properly, around the drive motor pulley.

**c.** Manually rotate the drive motor to tighten the belt.

**d.** With a TORX T25 driver, fully tighten the two screws holding the Drive Motor to the Frame.

## 5.12.3 Adjustments

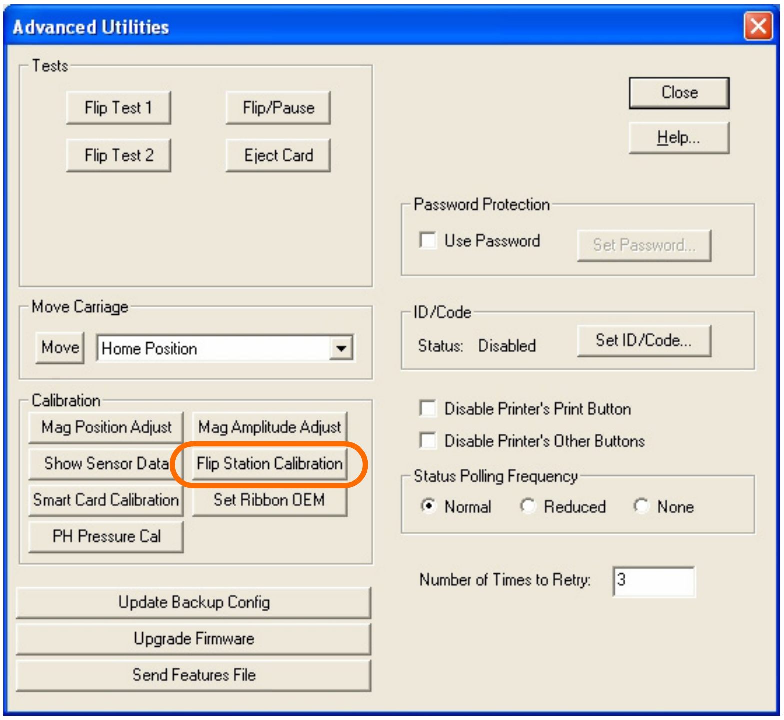
### 5.10.4.11 Flip Station Calibration

This routine determines the number of motor steps it takes for the carrier to descend from the *upper limit* position to the *lower limit* position, that being the carrier's physical end stop. This stored number is used to drive the carrier down to the rest position before each and every flip station action.

Calibration is a one-time setup routine, but is also a useful starting point when diagnosing flip station problems.

**Step 1.** Power OFF, lift the cover, and then push the carrier down to its physical end stop. When pushing the carrier down, push at the back of the carrier, near the guide shaft. Do not force!

**Step 2.** Access the Advanced Utilities screen: select *Start > Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties > Device Settings > Control > Advanced Utilities.*


Advanced Utilities
Tests
Flip Test 1
Flip/Pause
Flip Test 2
Eject Card
Close
Help...
Password Protection
Set Password...
Move Carriage
Move
ID/Code
Set ID/Code...
Calibration
Mag Position Adjust
Mag Amplitude Adjust
Show Sensor Data
Flip Station Calibration
Smart Card Calibration
Set Ribbon OEM
PH Pressure Cal
Status Polling Frequency
Update Backup Config
Upgrade Firmware
Send Features File

☐ Use Password

Home Position

Status: Disabled

☐ Disable Printer's Print Button

☐ Disable Printer's Other Buttons

● Normal ○ Reduced ○ None

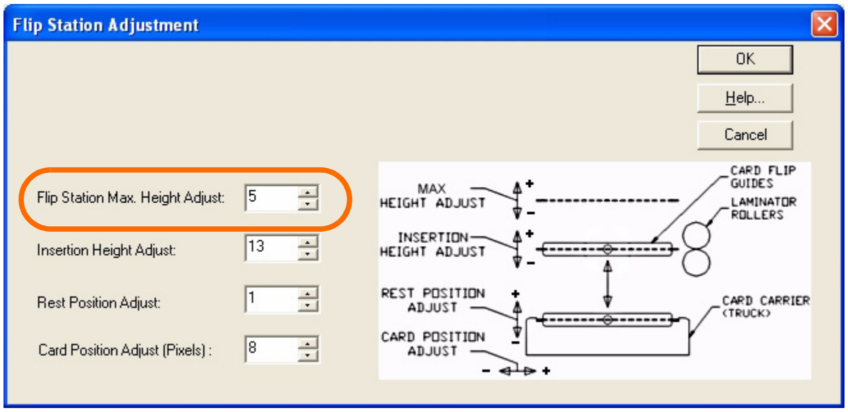
Number of Times to Retry: 3

**Step 3.** Click the Flip Station Calibration button. This elevates the carrier to the *upper limit* position, at which point the motor stops, and the step count is saved in flash memory. The motor then drives the carrier back down to the *lower limit* position.

### 5.10.4.12 Max Height Adjust

The card carrier needs to move high enough to actuate the flipping mechanism, but should not over-travel excessively.

To access the Flip Station Adjustment screen, select *Start > Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties > Device Settings > Printer Adjustment > Flip Station Adjust...*


Flip Station Adjustment
OK
Help...
Cancel
MAX HEIGHT ADJUST
INSERTION HEIGHT ADJUST
REST POSITION ADJUST
CARD POSITION ADJUST
CARD FLIP GUIDES
LAMINATOR ROLLERS
CARD CARRIER (TRUCK)
+
-

Flip Station Max. Height Adjust: 5
Insertion Height Adjust: 13
Rest Position Adjust: 1
Card Position Adjust (Pixels) : 8

Increase this parameter only if there is an occasional failure to flip.

Reduce this value if the carrier hits the upper bracket holding the guide shaft.

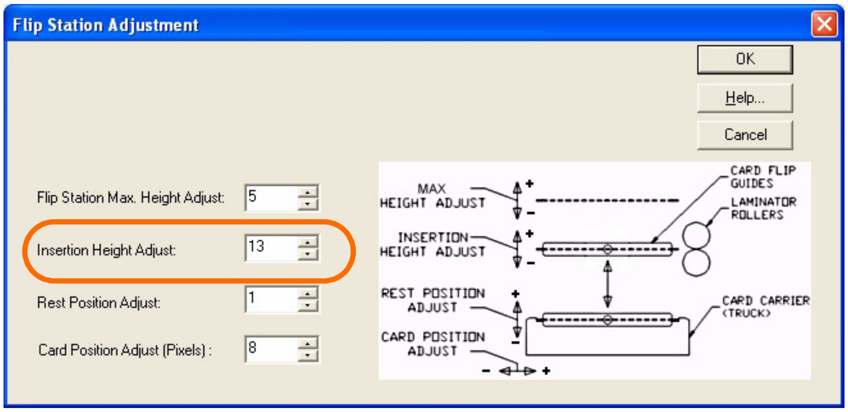
If the flip station is not flipping reliably, be sure it is a travel issue rather than anything else by opening the printer cover and moving the flip station up by hand to activate the flip. If it doesn't flip, the mechanism itself is defective, so adjusting the height parameter will have no effect.

If you overdo the height adjustment (i.e., sending the carrier too high), the U-shaped azimuth-adjust molding may be driven off the end of its track. This causes the carrier to wobble as the "U" re-engages on the way down.

## 5.10.4.13 Insertion Height Adjust

“Insertion height” is the intermediate (non flipping) elevation to which the card is driven for insertion into the laminator.

To access the Flip Station Adjustment screen, select *Start > Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties > Device Settings > Printer Adjustment > Flip Station Adjust...*

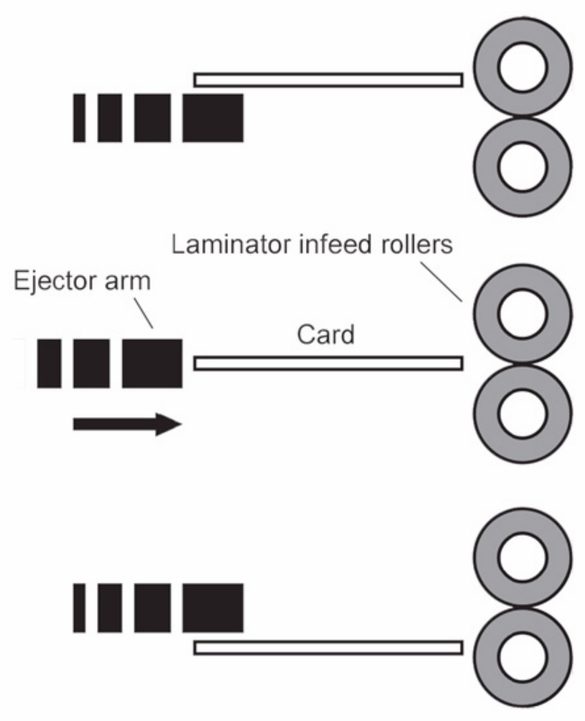


Flip Station Adjustment
OK
Help...
Cancel
MAX HEIGHT ADJUST
INSERTION HEIGHT ADJUST
REST POSITION ADJUST
CARD POSITION ADJUST
CARD FLIP GUIDES
LAMINATOR ROLLERS
CARD CARRIER (TRUCK)
+
-

Flip Station Max. Height Adjust: 5
Insertion Height Adjust: 13
Rest Position Adjust: 1
Card Position Adjust (Pixels) : 8

Adjust the parameter if the ejector arm misses the card.

Raise the insertion height by increasing the parameter (making it less negative), and vice versa.



Laminator infeed rollers
Ejector arm
Card

## 5.10.4.14 Rest Position Adjust

This procedure adjusts how far down the carrier drives.

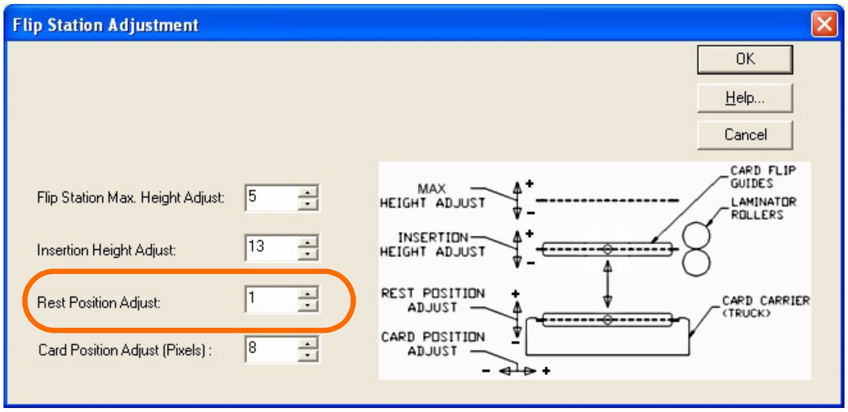
If the truck fails to pull the card out of the flip station after the flipping action, chances are:

1. The card position is wrong; see "Card Position Adjust" on page 191.
2. The carrier is not coming down all the way; repeat "Flip Station Calibration" on page 187.

Another adjustment for this:

**Step 1.** Power down the printer, then power up and listen for the flip station reset action.

**Step 2.** Access the Flip Station Adjustment screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Device Settings* > *Printer Adjustment* > *Flip Station Adjust...*



Flip Station Adjustment

Flip Station Max. Height Adjust: 5

Insertion Height Adjust: 13

Rest Position Adjust: 1

Card Position Adjust (Pixels) : 8

OK
Help...
Cancel
MAX HEIGHT ADJUST
INSERTION HEIGHT ADJUST
REST POSITION ADJUST
CARD POSITION ADJUST
CARD FLIP GUIDES
LAMINATOR ROLLERS
CARD CARRIER (TRUCK)
+
-
+
-
+
-
-
+

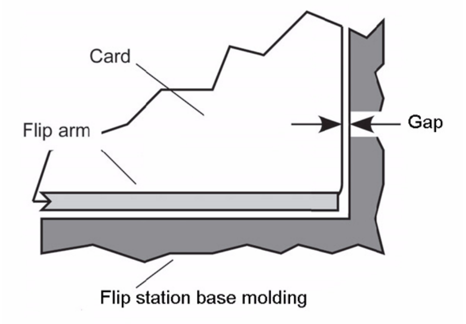
**Step 3.** Open the main cover, then push gently down on the carrier (at the back, close to the guide shaft). If there is any downward travel, increase the parameter (make it less negative) -- but do not overdo it, because this will increase the reset noise and potentially damage the carrier drive.

### 5.10.4.15 Card Position Adjust

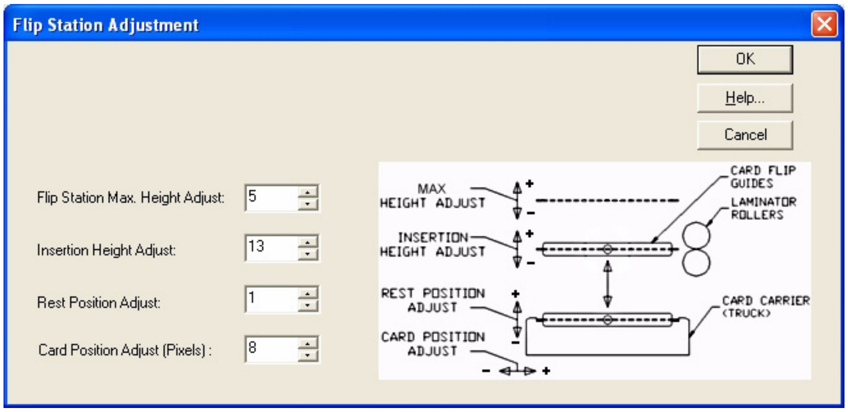
This procedure adjusts how far the truck drives into the Flip Station. The adjustment should be set so that the card is centered in the flip arms (if it is not centered, the truck may have difficulty removing the card after the flipping action).

To move the card into the Flip Station, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Device Settings* > *Control* > *Advanced Utilities* > *Move Carriage.* From the drop-down menu, select *Flip Position*. Press the Move button.

The card should drive smoothly to rest almost touching the right hand edge of the flip station base molding. It must not rebound off the edge. The card should land with a gap of between 0.04" and 0.1" (1.0 mm to 2.5 mm). The exact gap is not critical, but it has to be visibly there.


Card
Flip arm
Gap
Flip station base molding

To access the Flip Station Adjustment screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Device Settings* > *Printer Adjustment* > *Flip Station Adjust...*


Flip Station Adjustment
OK
Help...
Cancel
MAX HEIGHT ADJUST
INSERTION HEIGHT ADJUST
REST POSITION ADJUST
CARD POSITION ADJUST
CARD FLIP GUIDES
LAMINATOR ROLLERS
CARD CARRIER (TRUCK)
+
-

Flip Station Max. Height Adjust: 5

Insertion Height Adjust: 13

Rest Position Adjust: 1

Card Position Adjust (Pixels) : 8

To move the card further to the right, increase (make less negative) the Card Position Adjust parameter, and vice versa.

**Important •** This is a critical adjustment. What can happen if the card position is incorrect? The truck can depart, leaving the card in the flip arms, or it may drag the card an inch or two toward the print station, then jam.

# 5.13 Printhead Assembly

**Electrostatic Discharge Caution** • The Printhead is extremely susceptible to Electrostatic Discharge (ESD) damage. Do not touch the bottom surface of the Printhead. The replacement must be performed at a static-free work station, an anti-static wrist strap must be worn and properly terminated, or other appropriate protection must be used.

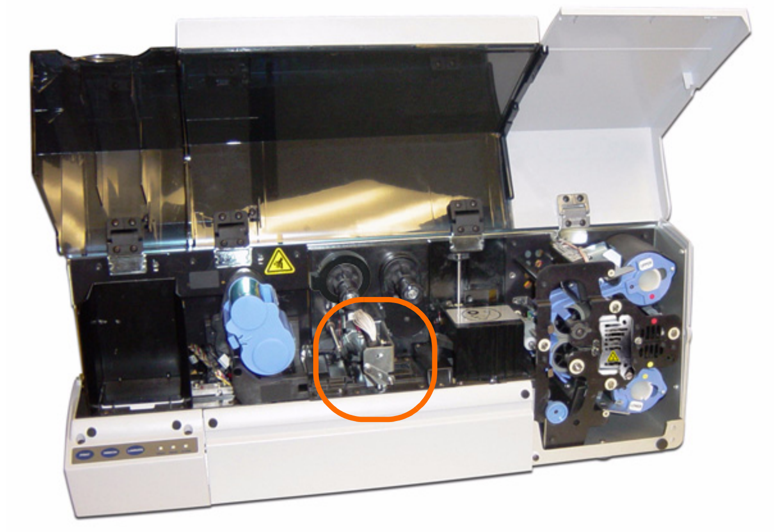
**Important** • This procedure describes replacing the Printhead Assembly. The Printhead Assembly is supplied with components in correct alignment with each other. These alignments are critical to proper operation of the printer.

**Important** • Do not deviate from the procedure given here, do not loosen or tighten any screws except those specifically noted in this procedure, and do not attempt to adjust any part of the Printhead Assembly.

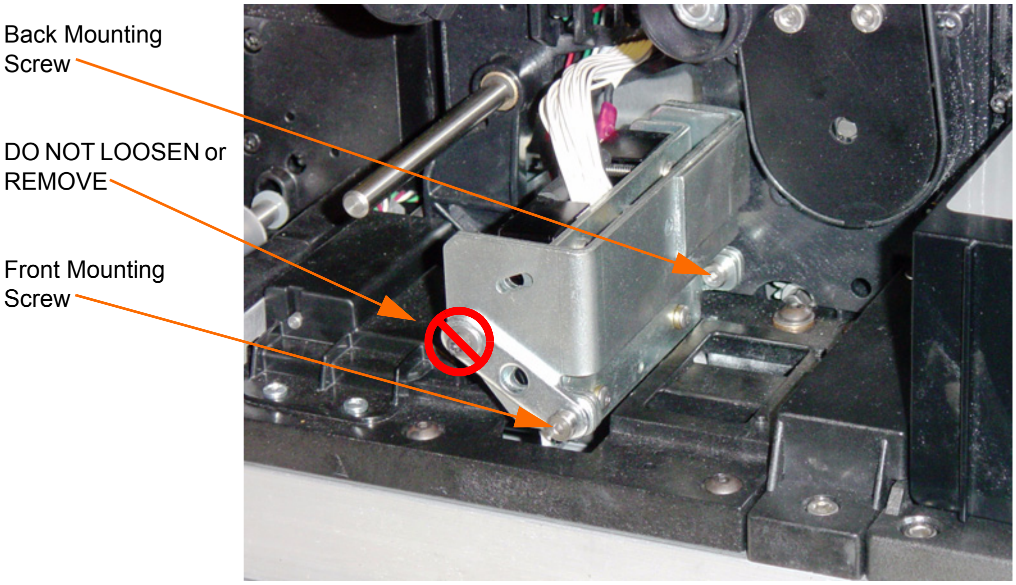
**Note** • The Printhead Assembly can be replaced without removing any other parts of the printer.

## 5.13.1 Removal

**Step 1.** Locate the Printhead Assembly.

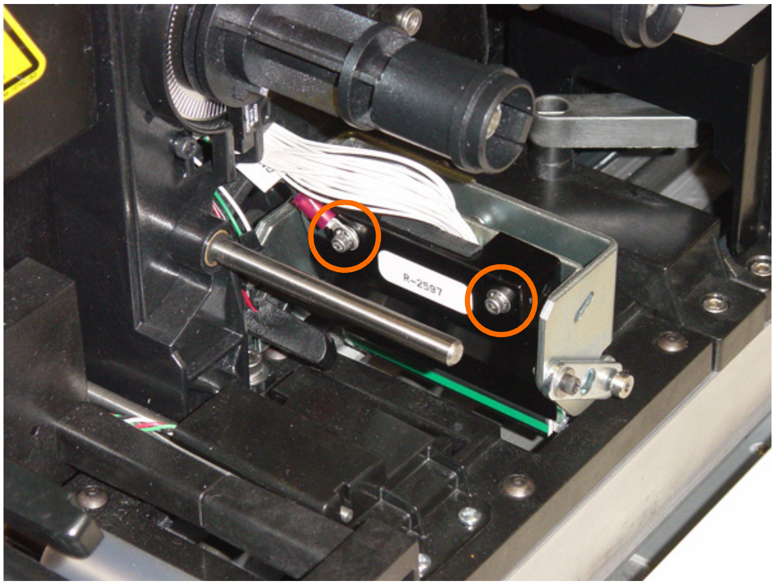


**Step 2.** With a 5/64” hex driver, remove the front mounting screw (LONG SHOULDER).


Back Mounting Screw
DO NOT LOOSEN or REMOVE
Front Mounting Screw

**Step 3.** With a 5/64” hex driver, remove the back mounting screw (SHORT SHOULDER).

**Step 4.** With a 3/32” hex driver, remove the two screws holding the Printhead Cover in place. Note that the ground wire is attached via the longer rear screw.

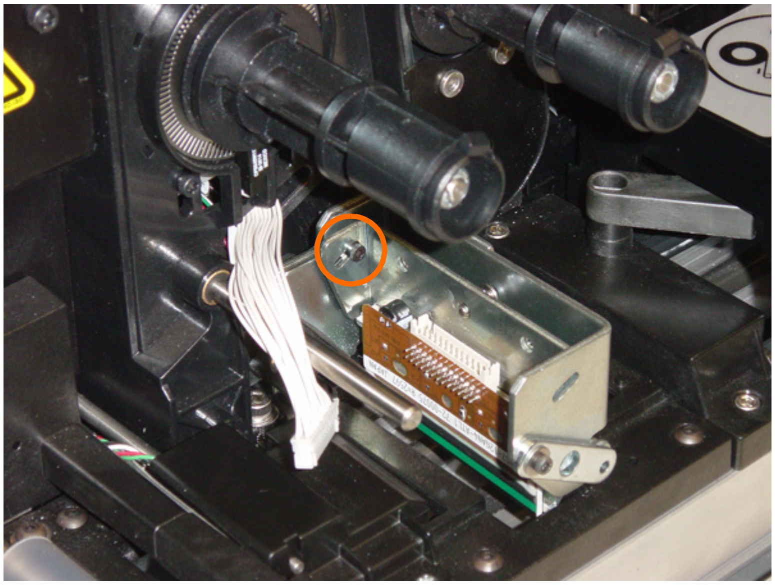


**Step 5.** Remove the Printhead Cover.

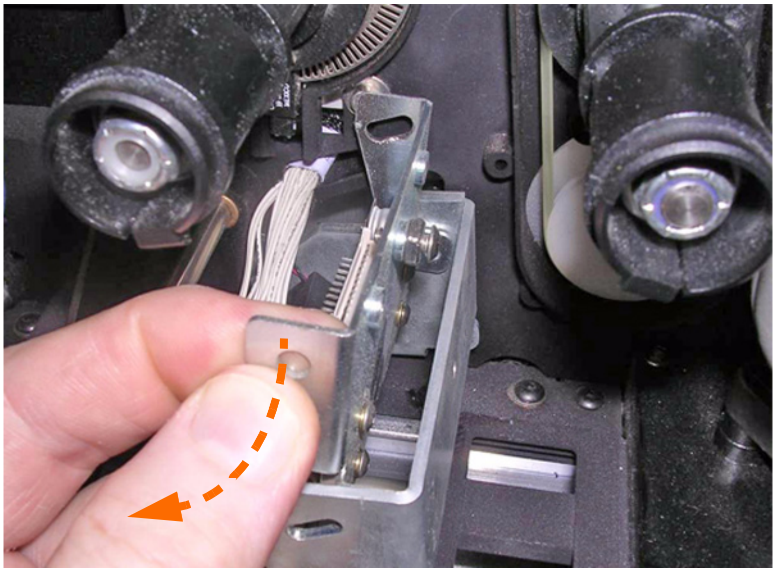
**Step 6.** Move the ground wire out of the way.

**Step 7.** Disconnect the Printhead Cable.

**Step 8.** With a TORX T10 driver, remove the inside mounting screw.



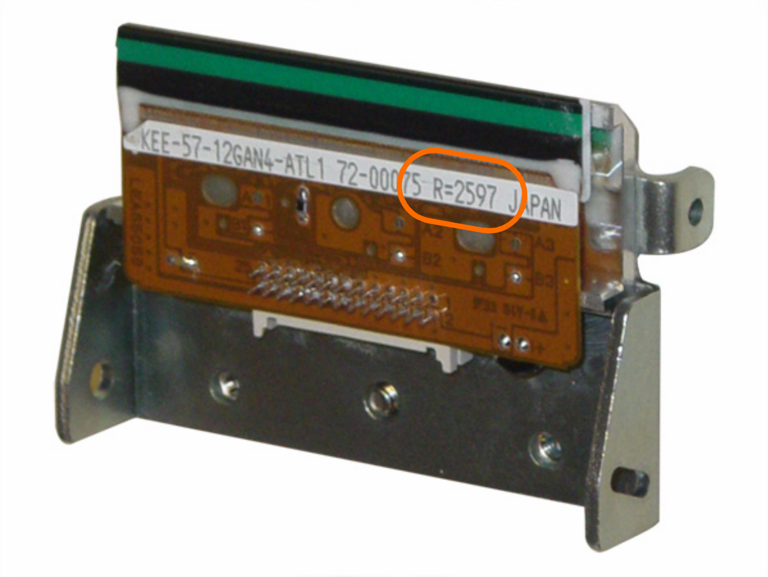
**Step 9.** Remove the Printhead Assembly.



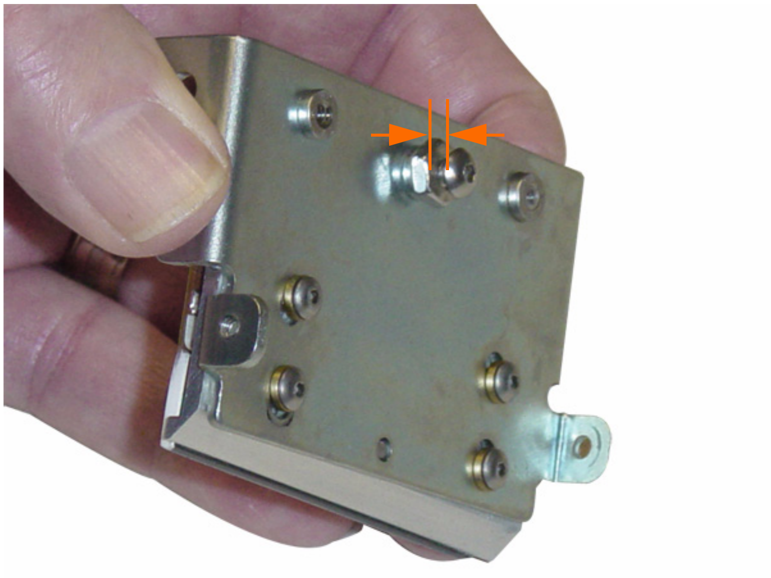
## 5.13.2 Replacement

**Caution** • Do not touch the bottom edge of the print head. Grease or other contaminants from the hands can attract particles that may in time damage the head

**Step 1.** Note the resistance (e.g., R=2597) listed on the replacement Printhead Assembly. Also, change the value on the printhead cover to reflect the new resistance value.



**Step 2.** Preset the angle adjust screw to approximately 30 mils (the thickness of a card).



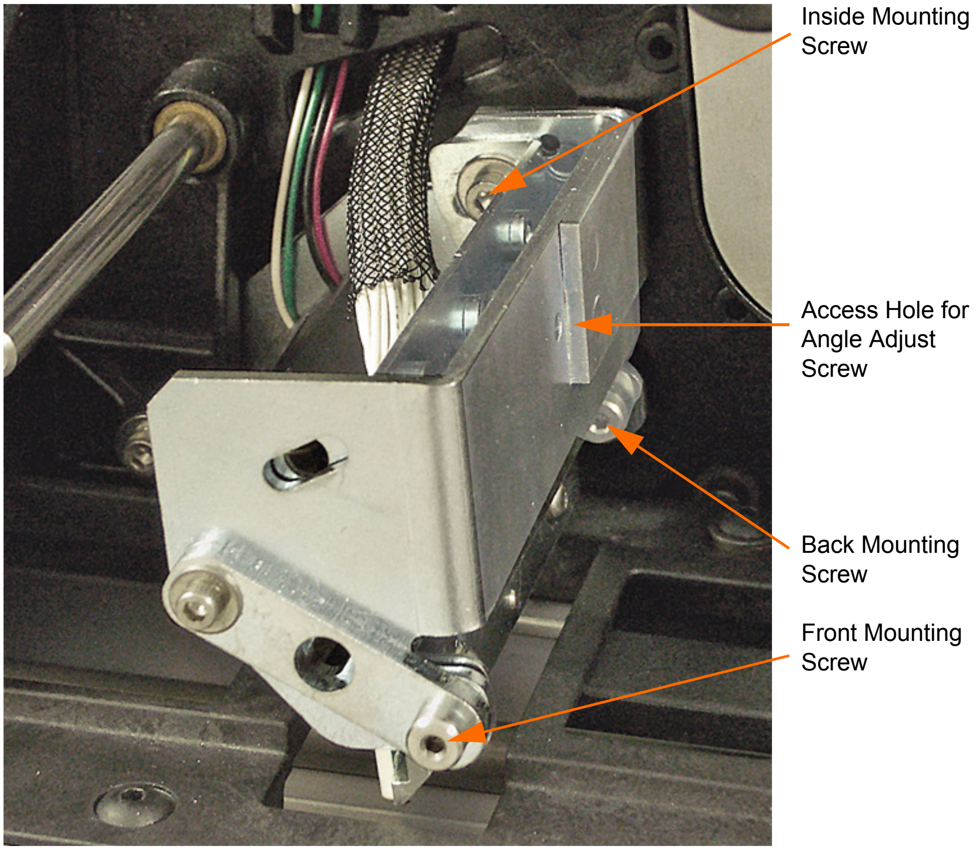
**Caution** • Make sure power is ***disconnected*** before working on the print head. Also note that the head will likely be ***destroyed*** if power is reapplied while you are in process of reconnecting the cable, or if the plug is not seated properly.

**Step 3.** Connect the cable to the replacement printhead, *making sure* it is seated properly.

**Step 4.** Install the back mounting screw. Note that the back screw is the *shorter* of the two mounting screws.

**Step 5.** Install the front mounting screw.

**Step 6.** Ensure the front and back mounting screws are fully tightened.



**Step 7.** Loosely tighten the inside mounting screw.

**Step 8.** Pivot the head assembly forward to bring the angle adjust screw in contact with the print head frame, then tighten inside mounting screw.

**Step 9.** Make sure the cable is not inhibiting *free rotation* of the Printhead about its pivot.

**Step 10.** Adjust the Printhead; see Section 5.13.3.

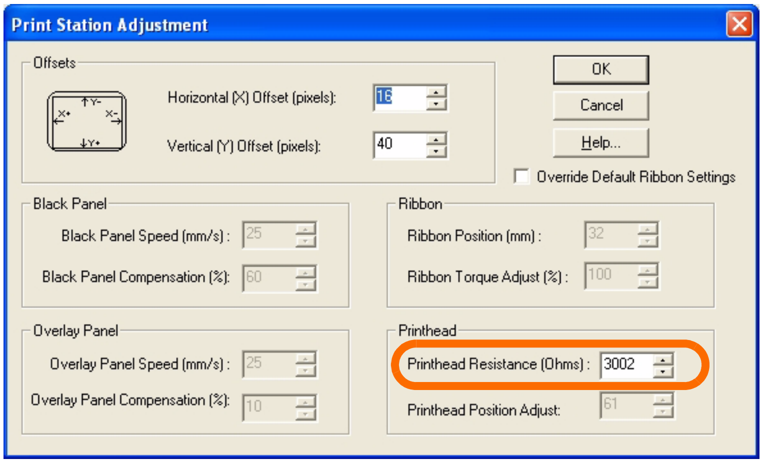
## 5.13.3 Tests and Adjustments

**Step 1.** Enter the Printhead Resistance.

**a.** Select *Start* > *Printers and Faxes,* right click the *Zebra Card Printer,* and select *Properties* from the pop-up menu.

**b.** From the Card Printer Properties screen, select *Device Settings* > *Printer Adjustment* > *Print Station Adjust…*

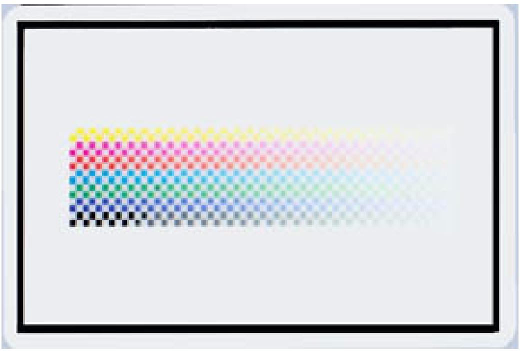
**c.** In the **Printhead Resistance (Ohms)** field, enter the resistance of the replacement Printhead noted in Step 1of the Printhead Replacement section.



Horizontal (X) Offset (pixels): 18
Vertical (Y) Offset (pixels): 40
☐ Override Default Ribbon Settings
Black Panel Speed (mm/s) : 25
Black Panel Compensation (%): 60
Ribbon Position (mm) : 32
Ribbon Torque Adjust (%) : 100
Overlay Panel Speed (mm/s) : 25
Overlay Panel Compensation (%): 10
Printhead Resistance (Ohms) : 3002
Printhead Position Adjust: 61

**Step 2.** Print a Test Card.

**a.** Press the PRINT button on the Control Panel to print the image stored in the printer’s memory. When the printer is powered up, the memory is loaded with a checkerboard test pattern. The following figure shows a “good” test print.

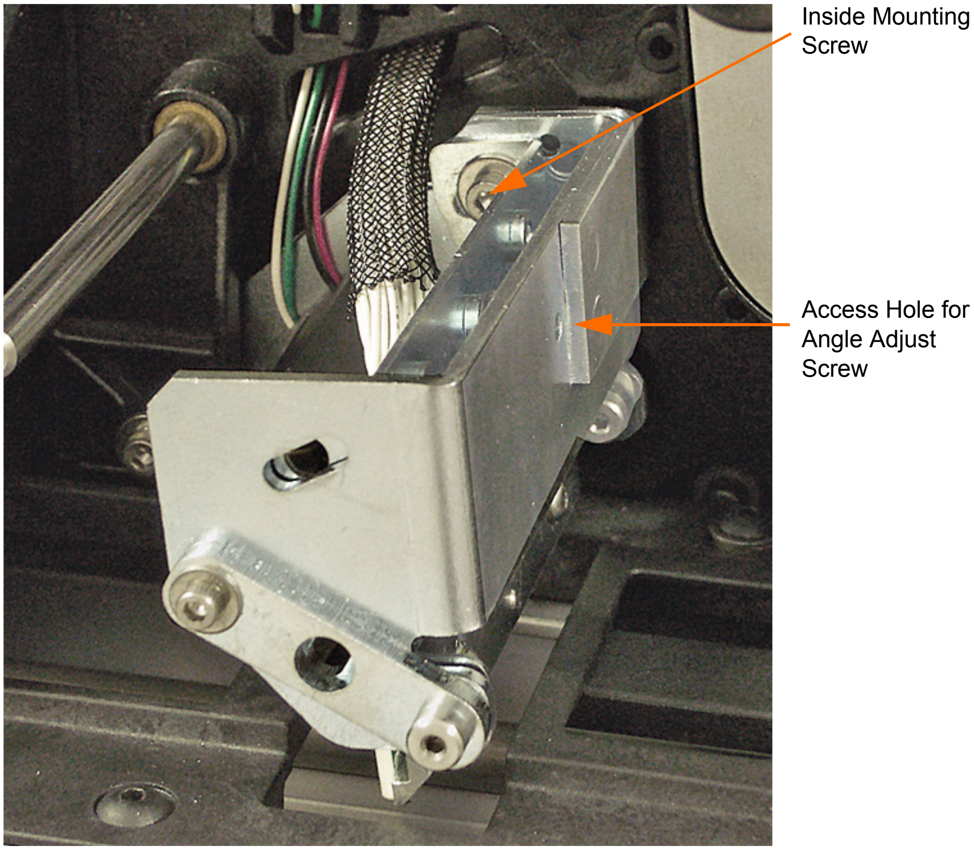


**b.** If you are satisfied with the overall appearance and uniformity of the image, then this procedure has been completed. If you feel some improvement could be achieved, proceed to Step 3; otherwise, go to Step 4

**Step 3.** Adjust the Printhead Angle.

**a.** If not already done, remove the Printhead Cover; and move the ground wire out of the way.

**b.** Loosen the inside mounting screw just enough to allow sliding movement of the printhead bracket.



**c.** Unlock the angle adjust screw, turn it a quarter-turn counterclockwise, then re-lock it. This will have the effect of rotating the head *counterclockwise* a fraction of a degree when you snug the button head against the printhead frame.

**d.** Tighten the inside mounting screw.

**e.** Print another Test Card. If there is a noticeable improvement, try another quarter-turn adjustment, then print again.

**f.** If the print quality is seen to deteriorate rather than improve, return to the previous setting or the 30-mil preset setting of the head angle screw, then rotate it *clockwise* in quarter-turn increments.

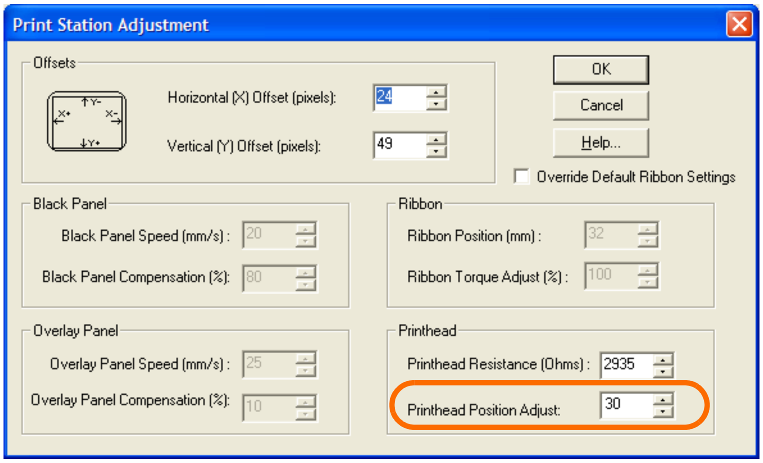
**g.** This adjustment is complete when you are satisfied with the Test Card image quality.

**Step 4.** Install the Printhead Cover (and ground wire). The ground wire is secured with the *longer* of the two cover screws.

**Step 5.** Adjust the Printhead Height/Pressure.

**a.** Select *Start > Printers and Faxes,* right click the *Zebra Card Printer,* and select *Properties* from the pop-up menu.

**b.** From the Card Printer Properties screen, select *Device Settings > Printer Adjustment > Print Station Adjust...*



Horizontal (X) Offset (pixels): 24
Vertical (Y) Offset (pixels): 49
☐ Override Default Ribbon Settings
Black Panel Speed (mm/s) : 20
Black Panel Compensation (%): 80
Ribbon Position (mm) : 32
Ribbon Torque Adjust (%) : 100
Overlay Panel Speed (mm/s) : 25
Overlay Panel Compensation (%): 10
Printhead Resistance (Ohms) : 2935
Printhead Position Adjust: 30

**c.** In the Printhead Position Adjust field, decrease the value by 10; and print a card.

**d.** If your printed card still looks good to you, repeat Step c until you get an unacceptable printing. Unacceptable printing would be light printing to the point that the image is almost not being transferred to the card.

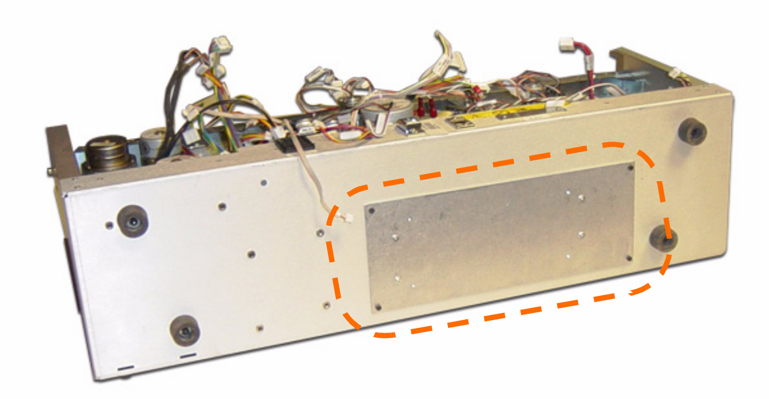
**e.** Once you have unacceptable printing, add 60 to your Printhead Position Adjust. This will set your optimal printhead height.

# 5.14 Power Supply

## 5.14.1 Removal

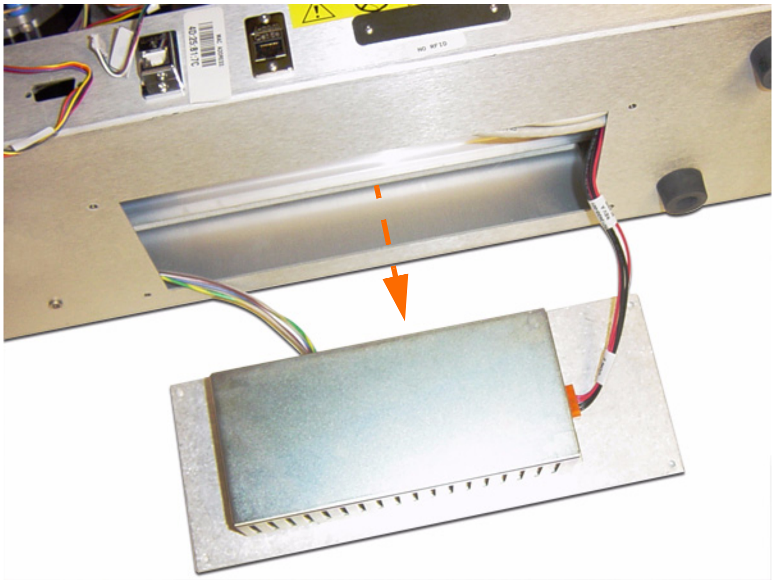
**Electric Shock Caution •** Before performing this procedure, set the printer power to OFF (O) and disconnect the power cord.

**Step 1.** Locate the Power Supply.



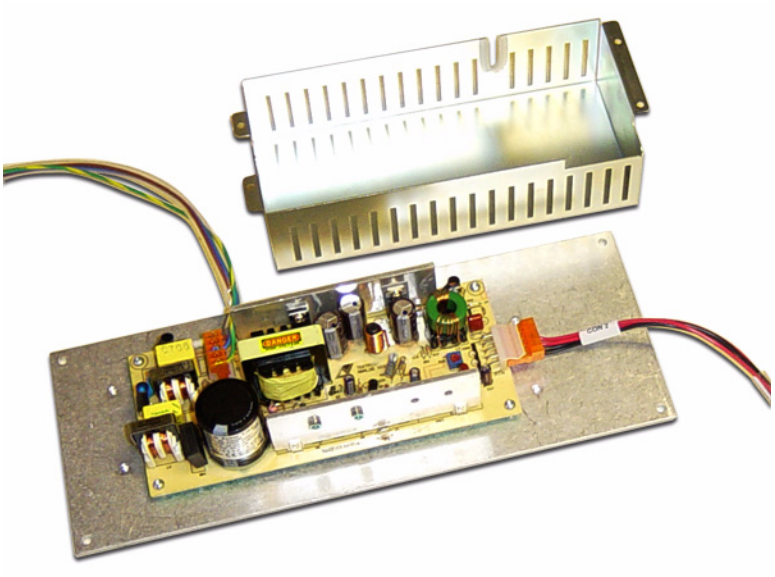
**Step 2.** With a TORX T15 driver, remove the four screws holding the Bottom Plate to the Frame.

**Step 3.** Carefully slide the Power Supply (attached to the bottom plate) out of the printer.



**Step 4.** With a TORX T10 driver, remove the four screws holding the power supply cover to the bottom plate.

**Step 5.** Remove the power supply cover.



**Step 6.** Disconnect the AC power connector.

**Step 7.** Disconnect the DC power connector.

**Step 8.** With a TORX T10 driver, remove the four screws holding the power supply to the bottom plate.

**Step 9.** Remove the Power Supply.

## 5.14.2 Tests and Adjustments

**Step 1.** Mount the replacement Power Supply to the bottom plate.

**Step 1.** Attach the AC and DC connectors to the Power Supply.

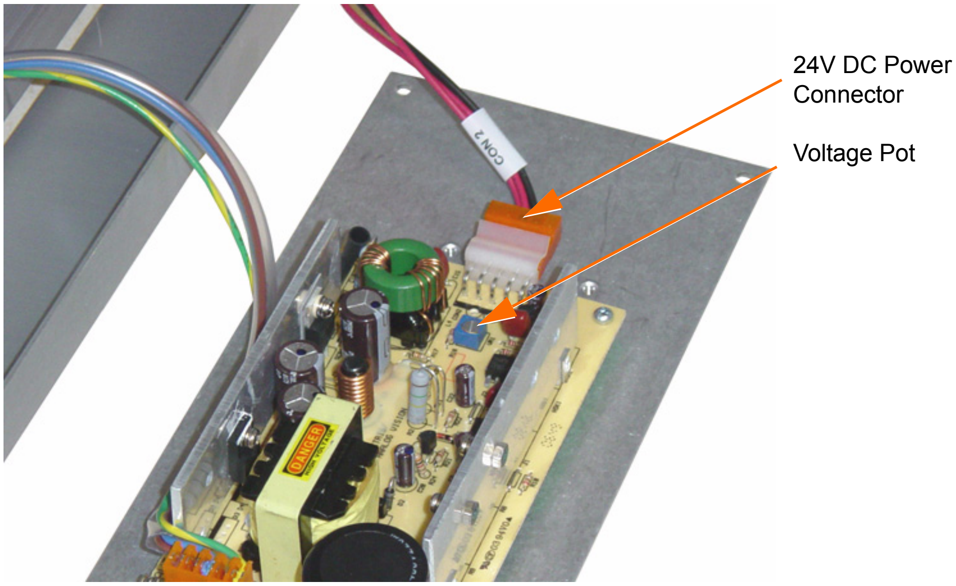
**Step 2.** Plug in and power up the printer.

---

**Electric Shock Caution** • Do not touch the Power Supply Board or the Main PCBA.

---

**Step 3.** With a Volt Meter in the VDC mode, attach the black probe to a black wire in the 24V DC Power connector; and attach the red probe to a red wire in the 24V DC Power connector.



**Step 4.** With a small flat-blade screwdriver, adjust the pot screw until the voltage reads 24.00 VDC on the Volt Meter. Note that turning the pot screw clockwise increases the voltage and vice versa.

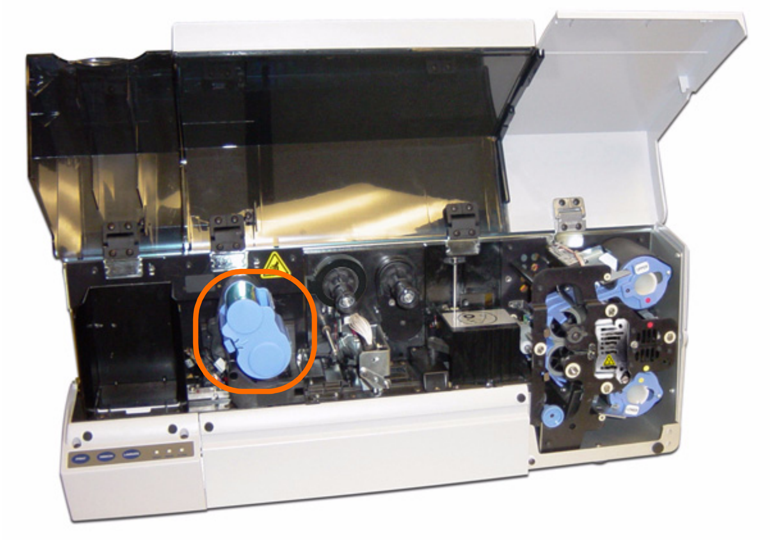
**Step 5.** Turn the printer off.

**Step 6.** Install the replacement Power supply.

# 5.15 Clean Roller

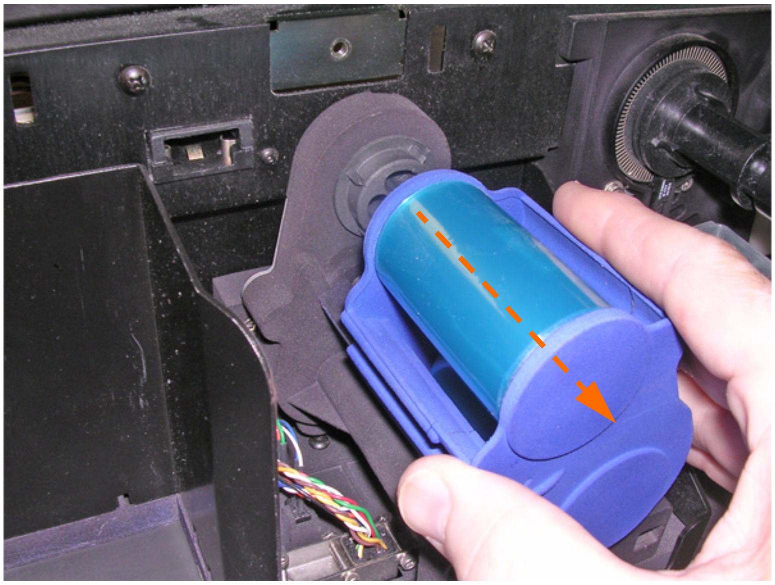
## 5.15.1 Removal

**Step 1.** Locate the Clean Station.

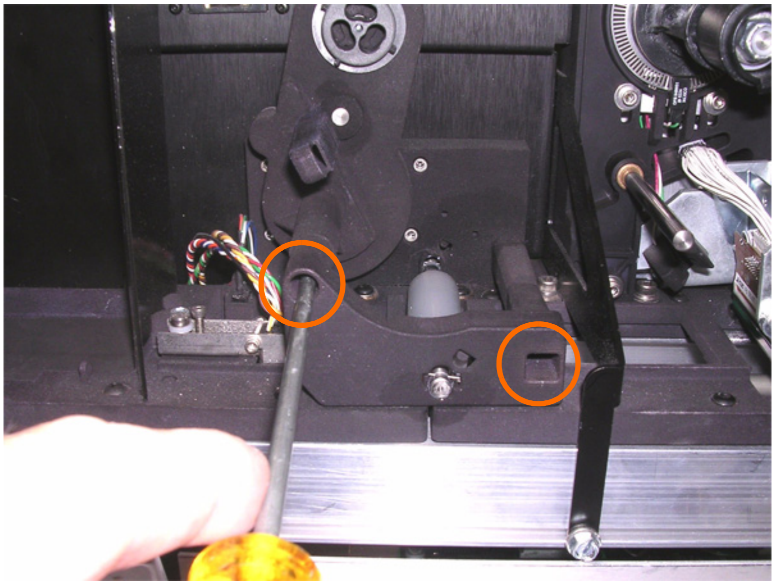


**Step 2.** If not already done, remove the Rear Cover (see Section 5.3) and the Main PCBA (see Section 5.5).

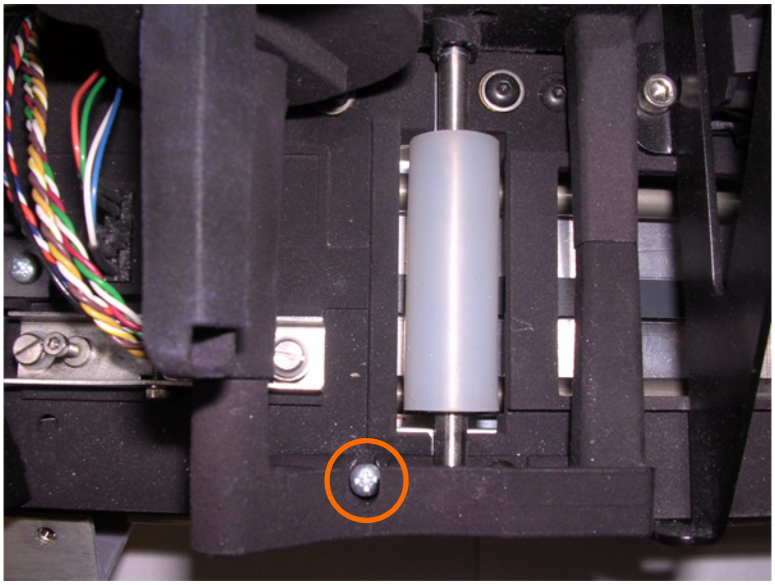
**Step 3.** Remove the Cleaning Tape Cartridge.



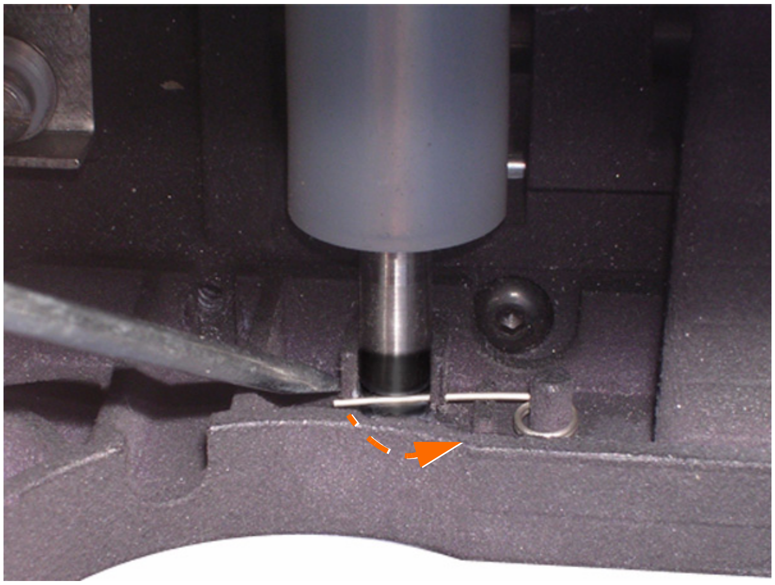
**Step 4.** With a Phillips #0 screwdriver, remove the two screws inside the front openings of the Clean Station Housing; see following view from side.



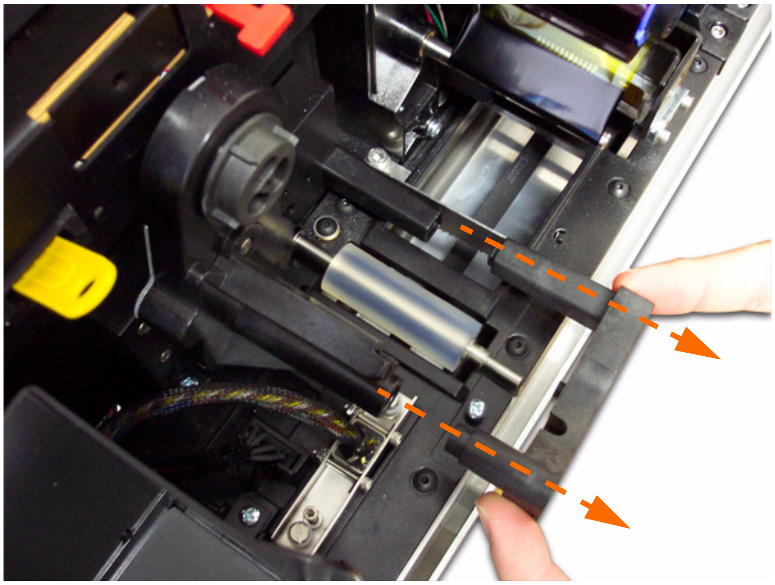
**Step 5.** With a Phillips #0 screwdriver, *loosen* the screw holding the Clean Station Housing to the Frame; see following view from top.



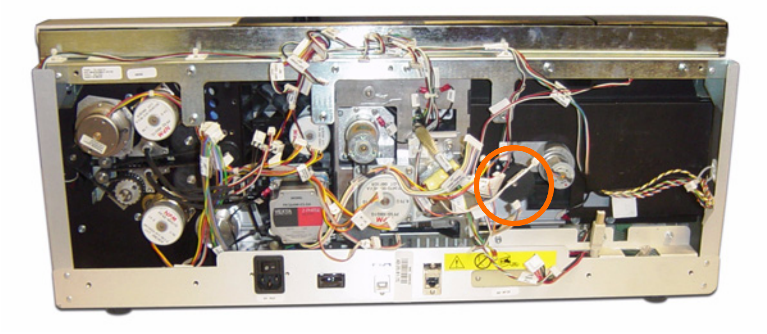
**Step 6.** With a small flat-blade screwdriver, lift the torsion spring out of the groove in the bushing that holds the clean roller shaft. Do not remove the spring from the housing.



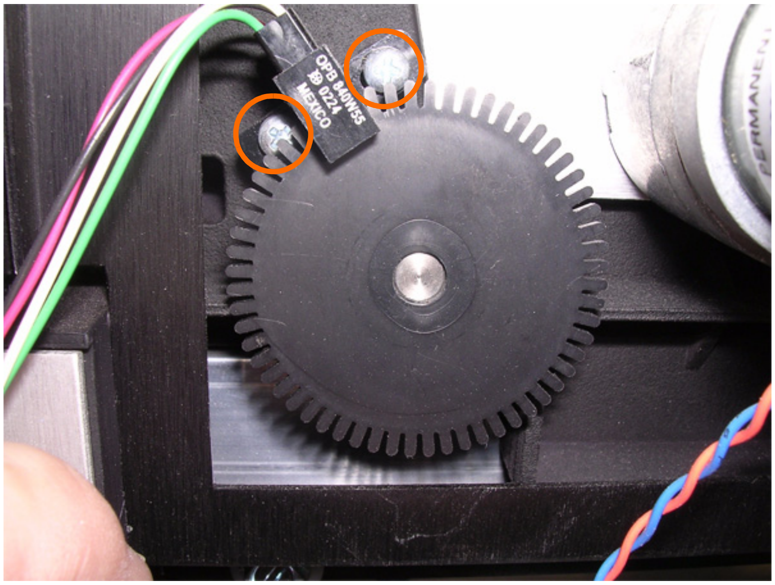
**Step 7.** Slide the Clean Station Housing out of the Frame. Note the orientation of the torsion spring should it come loose from the housing.



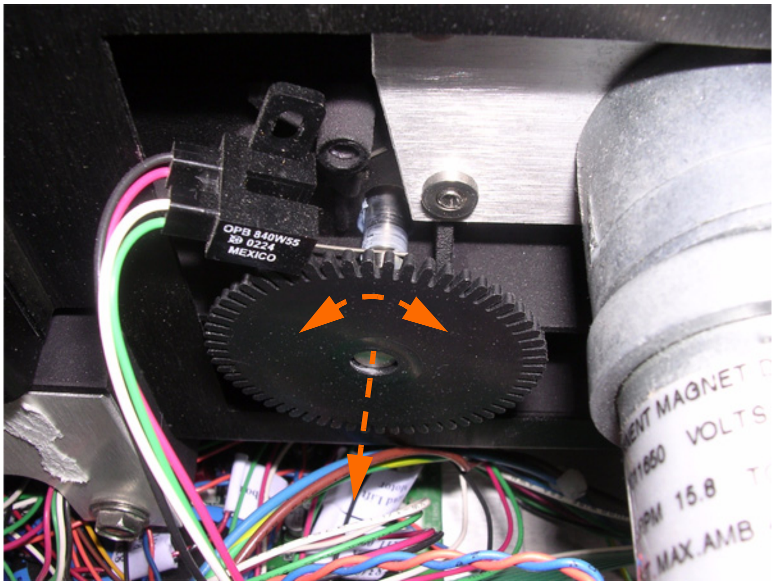
**Step 8.** From the rear of the printer, locate the Clean Station.



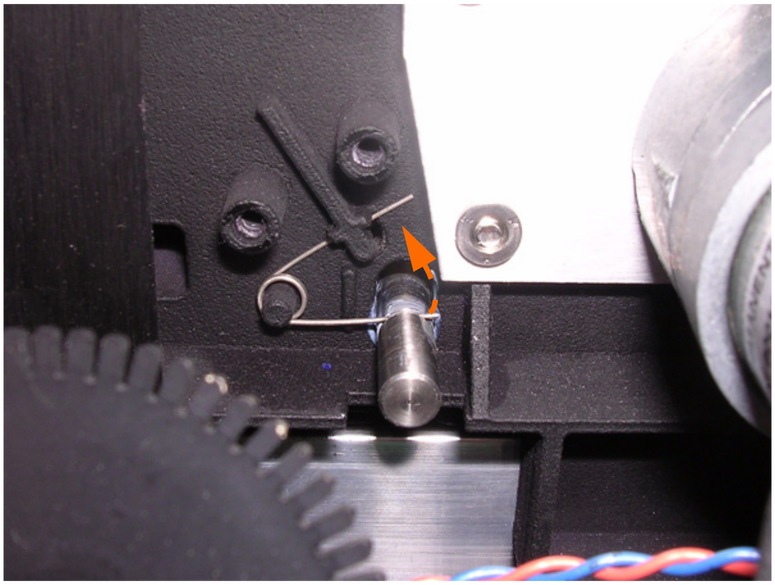
**Step 9.** With a Phillips #4 screwdriver, remove the two screws holding the Cleaning Encoder Sensor to the Frame. Move the sensor out of the way.



**Step 10.** Remove the Encoder Wheel from the clean roller shaft by gently turning the wheel back and forth while pulling outward.

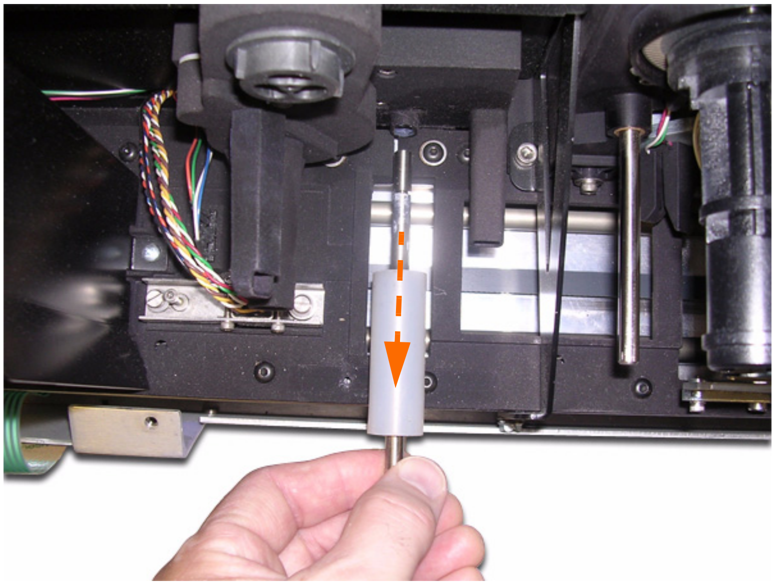


**Step 11.** Locate the torsion spring holding the clean roller shaft in place.



**Step 12.** With a small flat-blade screwdriver, lift the torsion spring out of the groove in the clean roller shaft. Do not remove the spring.

**Step 13.** From the front of the printer, slide the Clean Roller out of the Frame.

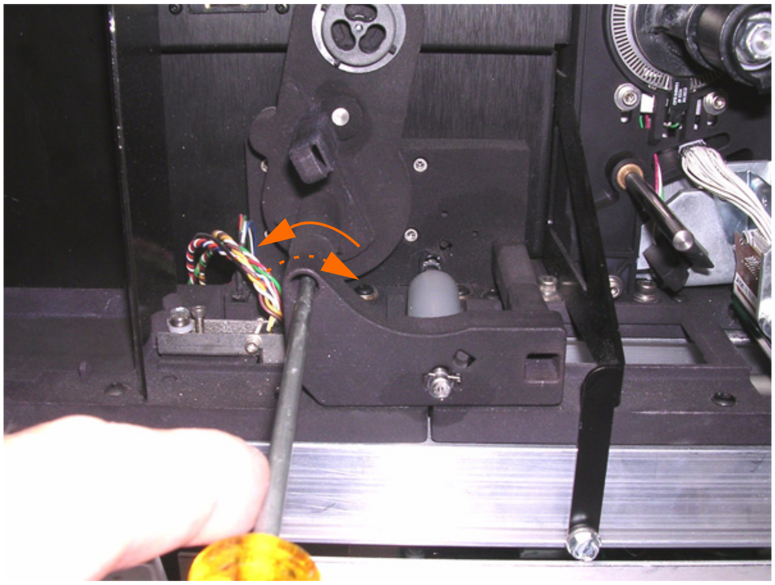


**Step 14.** Remove the Clean Roller.

## 5.15.2 Replacement

**Step 1.** Install the rear torsion spring, encoder wheel, and sensor first; then install the replacement Clean Roller.

**Step 2.** The Pivot Screw (left-side screw) must not be too tight (tighten, then back off 1/2 turn).



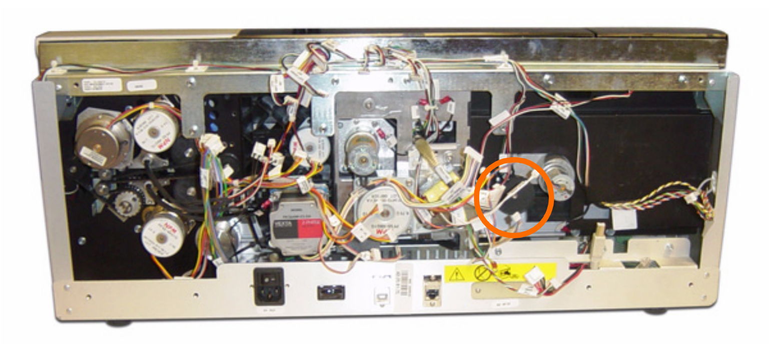
**Step 3.** After installing the replacement Clean Roller, run a clean cycle.

**Step 4.** If the cleaning tape seizes, adjust the Pivot Screw 1/2 turn counterclockwise. Repeat until the clean cycle becomes operational; see figure above.

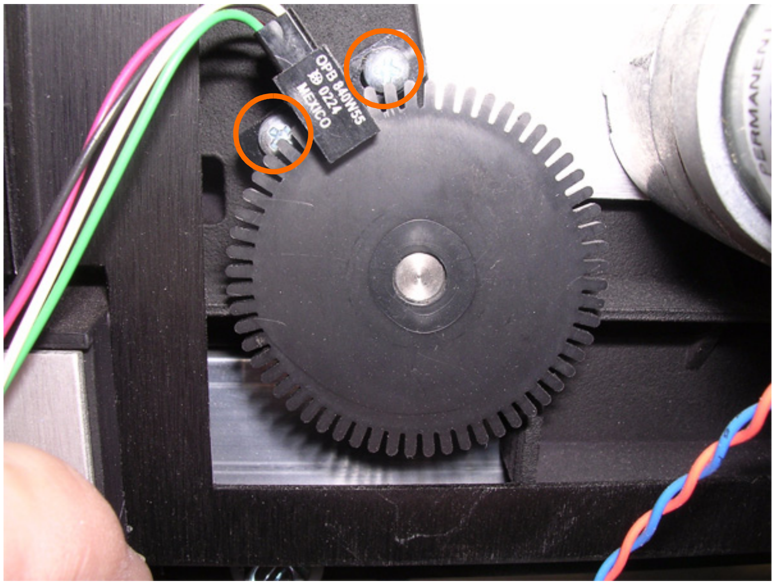
# 5.16 Cleaning Encoder Sensor

**Step 1.** If not already done, remove the Rear Cover (see Section 5.3) and the Main PCBA (see Section 5.5).

**Step 2.** From the rear of the printer, locate the Cleaning Encoder Sensor.



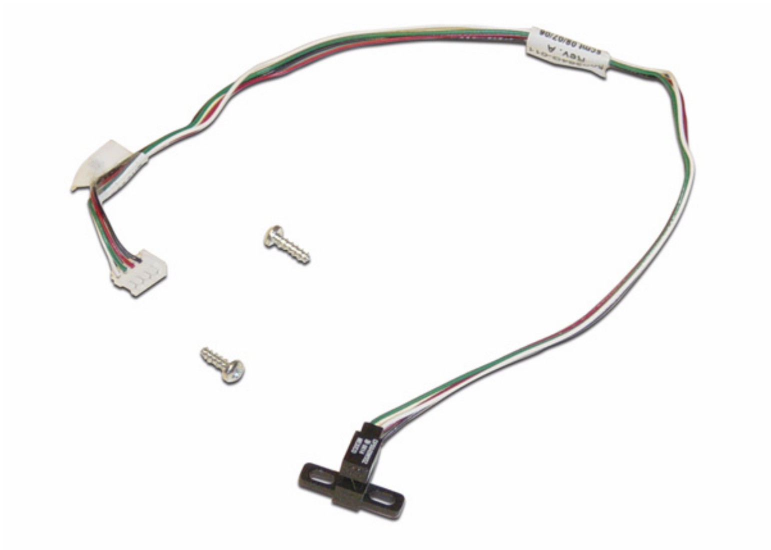
**Step 3.** With a Phillips #0 screwdriver, remove the two screws holding the Cleaning Encoder Sensor to the Frame.



**Step 4.** Cut any associated cable ties to free the Cleaning Encoder Sensor.

**Step 5.** If not already disconnected, remove the CLEAN ENCODER Connector from J29 on the Main PCBA.

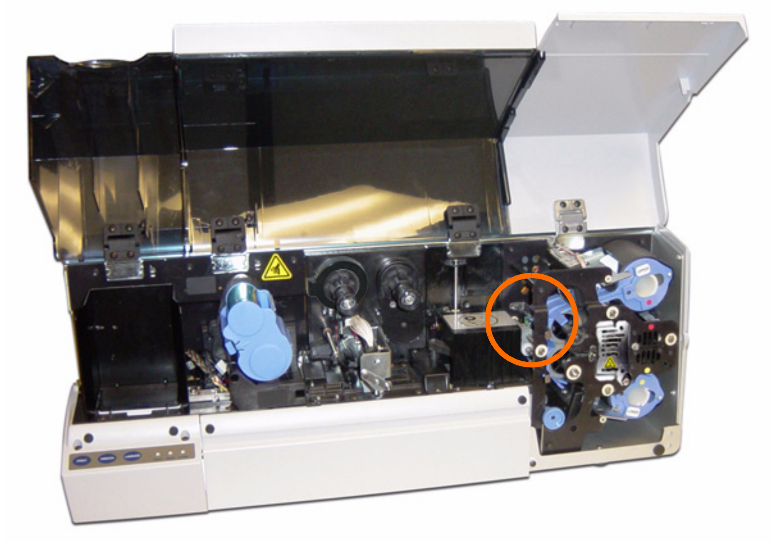
**Step 6.** Remove the Cleaning Encoder Sensor.



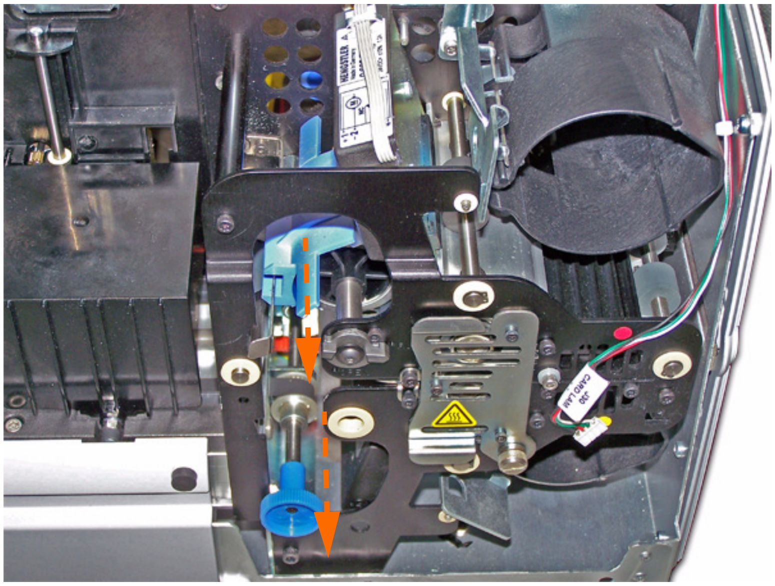
# 5.17 Laminator Sensor PCBA

## 5.17.1 Removal

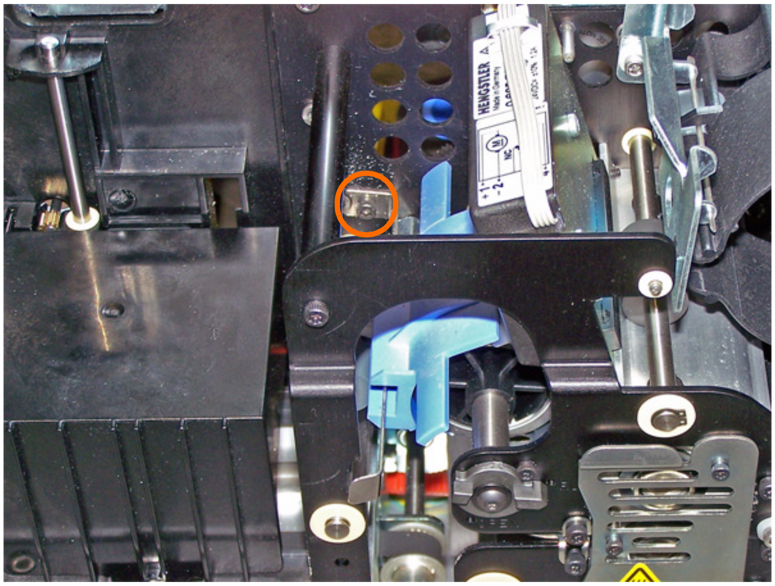
**Step 1.** Locate the Lam Sensor PCBA. The sensor is behind the Lam Transfer Rollers.



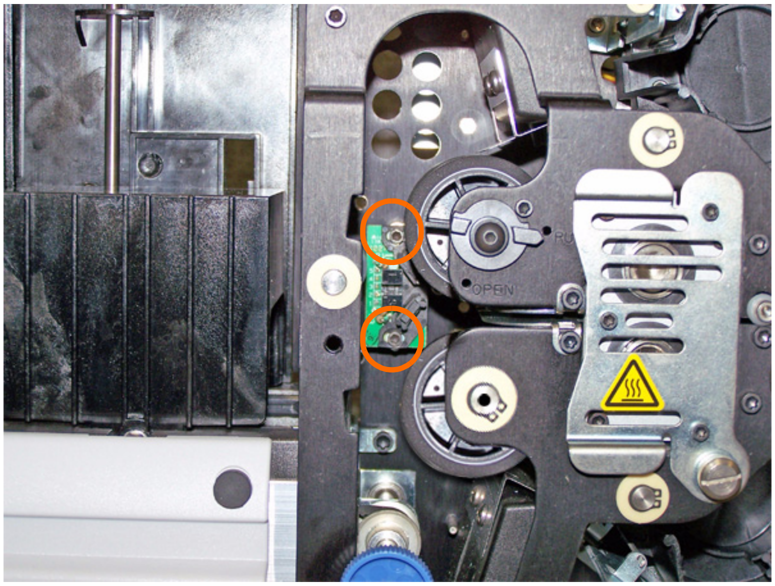
**Step 2.** Remove the upper and lower Flex Guides.



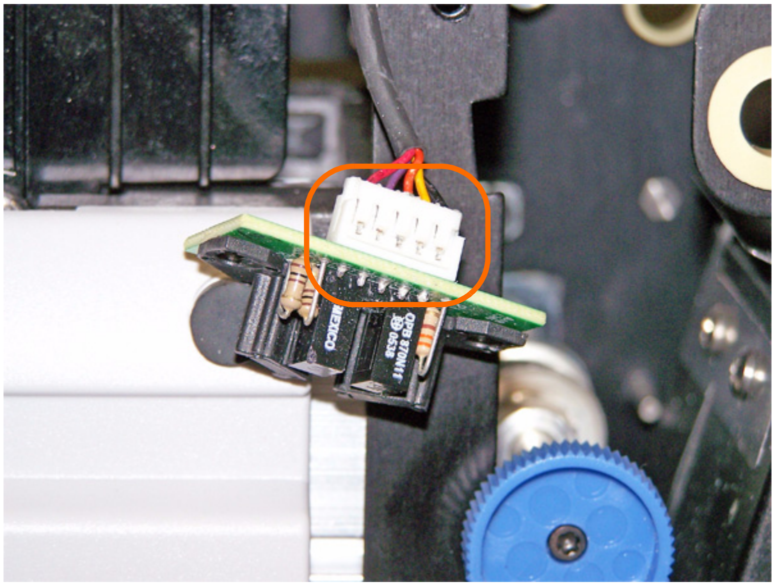
**Step 3.** With a TORX T15 driver, remove the screw holding the upper Retaining Spring to the Frame.



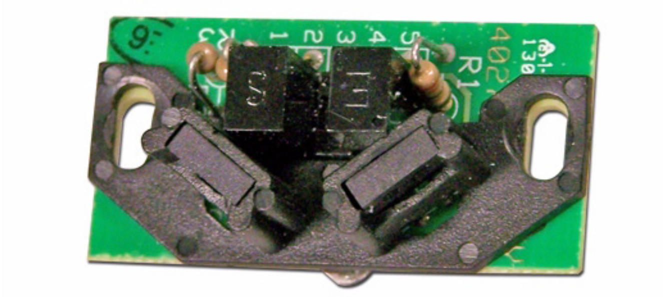
**Step 4.** With a TORX T15 driver, remove the two screws holding the Lam Sensor PCBA to the Frame.



**Step 5.** Unplug the Lam Sensor PCBA.



**Step 6.** Remove the Lam Sensor PCBA.

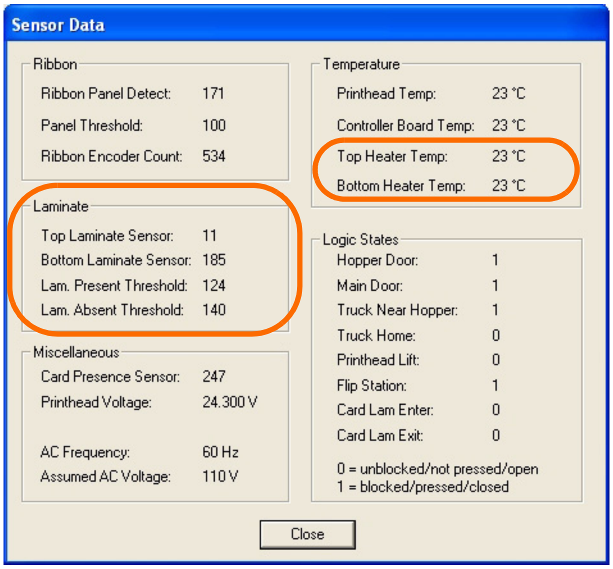


Note • When installing the replacement Lam Sensor PCBA, align the screws to the center of the opening. This will help in achieving the optimal sensor reading.

## 5.17.2 Tests and Adjustments

### Laminator Parameters in the Driver

To access the Status screen, select *Start* > *Printers and Faxes*. Right click on the *Zebra P630i* or *Zebra P640i* printer listing. Select *Properties* > *Device Settings* > *Control* > *Advanced Utilities* > *Show Sensor Data*


Sensor Data

Ribbon
Ribbon Panel Detect: 171
Panel Threshold: 100
Ribbon Encoder Count: 534

Laminate
Top Laminate Sensor: 11
Bottom Laminate Sensor: 185
Lam. Present Threshold: 124
Lam. Absent Threshold: 140

Miscellaneous
Card Presence Sensor: 247
Printhead Voltage: 24.300 V
AC Frequency: 60 Hz
Assumed AC Voltage: 110 V

Temperature
Printhead Temp: 23 °C
Controller Board Temp: 23 °C
Top Heater Temp: 23 °C
Bottom Heater Temp: 23 °C

Logic States
Hopper Door: 1
Main Door: 1
Truck Near Hopper: 1
Truck Home: 0
Printhead Lift: 0
Flip Station: 1
Card Lam Enter: 0
Card Lam Exit: 0

0 = unblocked/not pressed/open
1 = blocked/pressed/closed

1. Heater Temperatures -Temperatures measured by thermocouples in the top and bottom laminator heater cores.

2. Laminate Sensors - Reflective sensors that detect the presence of laminate on the transfer rollers. The threshold numbers are:

   - Lam Present Threshold = Below 124 (laminate present)
   - Lam Absent Threshold = Above 140 (laminate absent)

   The threshold numbers are not adjustable.

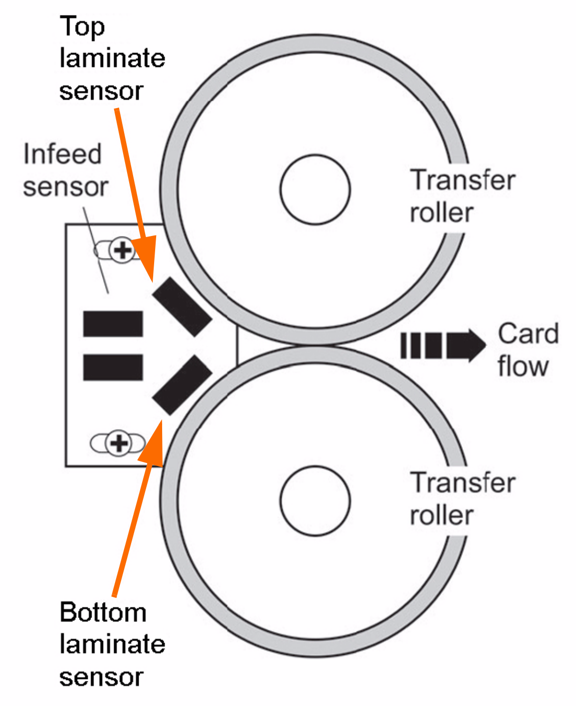
   Accurate positioning of the laminate sensors is essential. If they do not detect laminate reliably, performance of the entire printer is compromised.

## Functional Test of the Sensors

**Note •** The sensor board must be symmetrically positioned relative to the transfer rollers, with its attachment screws central in their slots. It is possible to get a false "good" reading if the sensors are too close to the feed rollers.

**Step 1.** From each of the laminators, upper and lower, remove the transfer guide and the laminate patch, if any, beneath it.The laminate sensor should read high, around 250.

**Step 2.** Replace the guide, and the laminate sensor should read no lower than 180. If lower than 180, move the sensor board away from the transfer rollers, to the left; see diagram below.

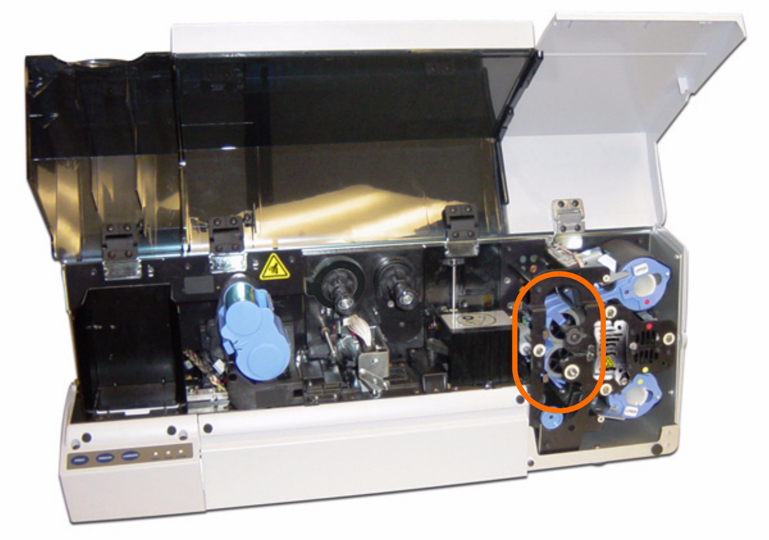

Top laminate sensor
Infeed sensor
Transfer roller
Card flow
Transfer roller
Bottom laminate sensor

**Step 3.** Complete the test by running laminate onto the rollers (press the LAMINATE button). The laminate sensor should read below 20. Adjust sensor board to correct.

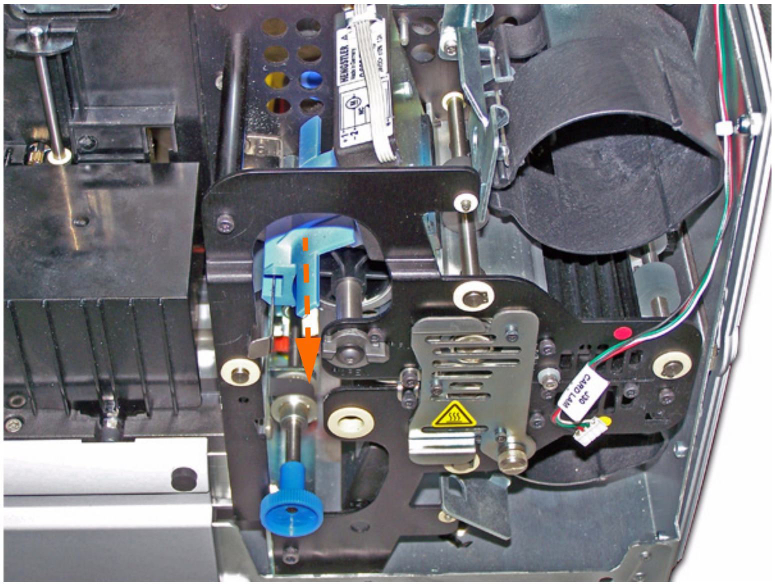
## 5.18 Laminator Transfer Rollers

**Note •** This procedure applies to the removal and replacement of the *upper* Lam Transfer Roller, which is in both the P630*i* and P640*i* card printers. The *lower* Lam Transfer Roller, which is only in the P640*i* card printer, is removed similarly.

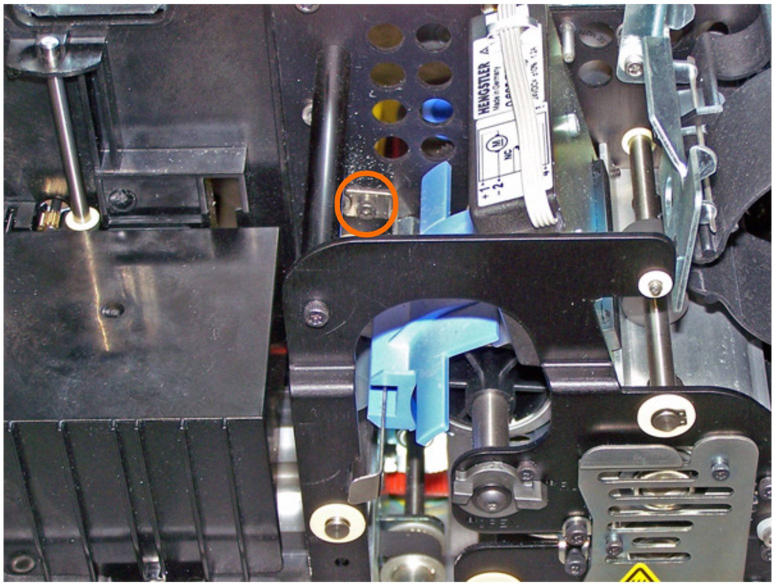
**Step 1.** Locate the Lam Transfer Rollers.



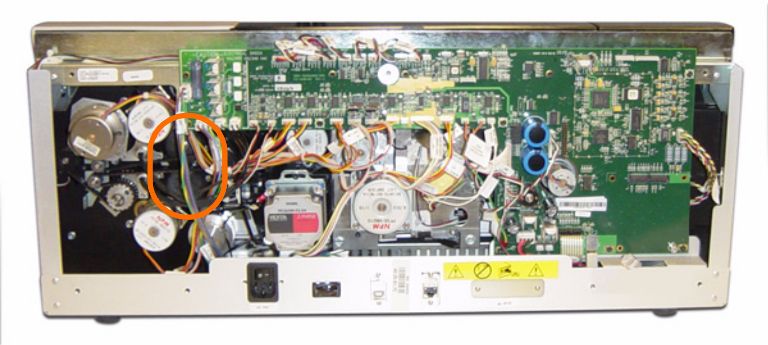
**Step 2.** Remove the upper Flex Guide.



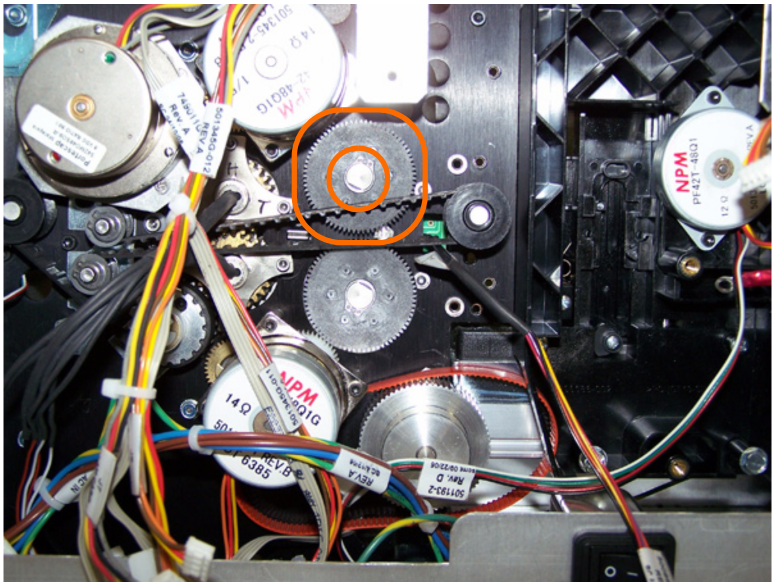
**Step 3.** With a TORX T15 driver, remove the screw holding the upper Retaining Spring to the Frame.



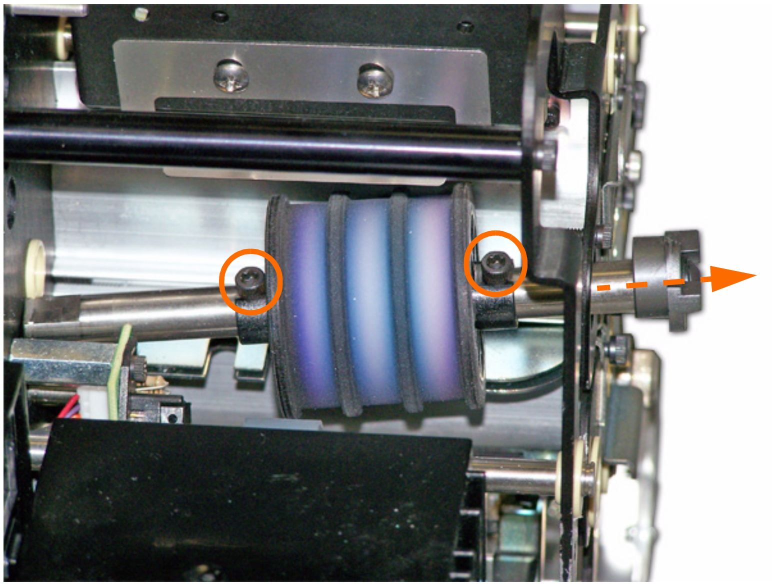
**Step 4.** From the rear of the printer, locate the Transfer Roller Gear.



**Step 5.** With snap-ring pliers, remove the snap retaining ring and roller gear from the transfer roller shaft.



**Step 6.** Push the shaft toward the front of the printer.

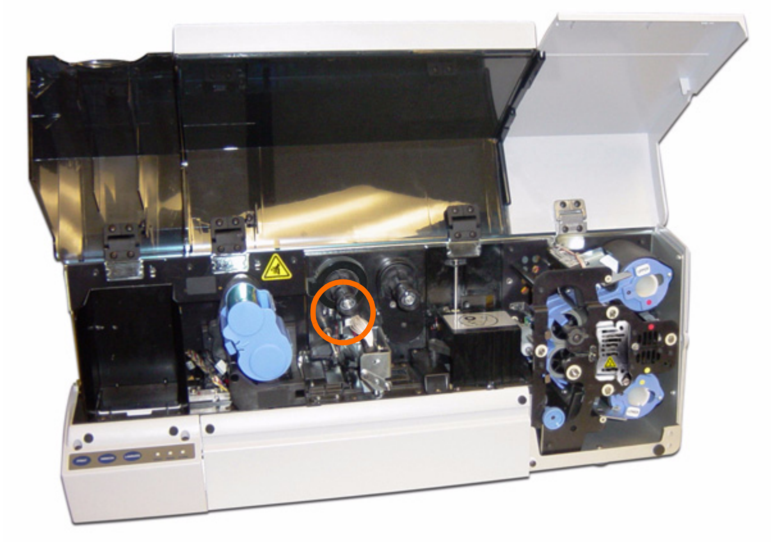


**Step 7.** With a TORX T15 driver, remove the two screws holding the Laminator Transfer Roller to the shaft; see figure above.

**Step 8.** Remove the Laminator Transfer Roller from the shaft by pulling the shaft out, toward the front of the printer.

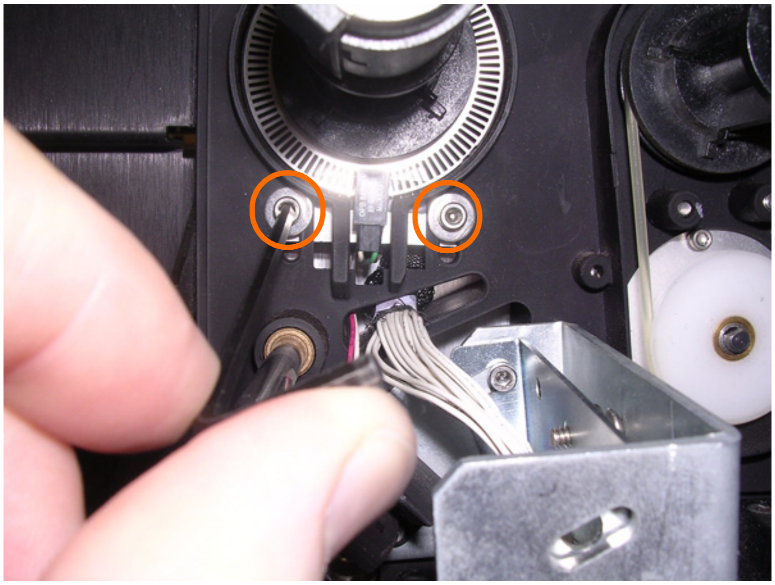
## 5.19 Ribbon Encoder Sensor

**Step 1.** Locate the Ribbon Encoder Sensor.



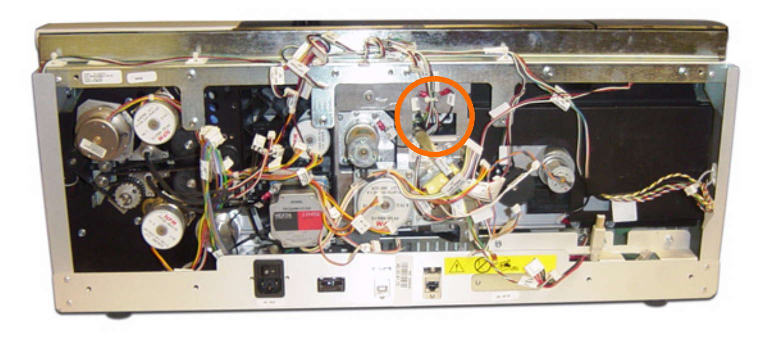
**Step 2.** Remove the RFID Antenna Cover. Note that the cover snaps in place.

**Step 3.** With a TORX T15 driver, remove the two screws that hold the Ribbon Encoder Sensor to the Frame.



**Step 4.** If not already done, remove the Rear Cover (see Section 5.3) and the Main PCBA (see Section 5.5).

**Step 5.** From the rear of the printer, locate the Ribbon Encoder Sensor.

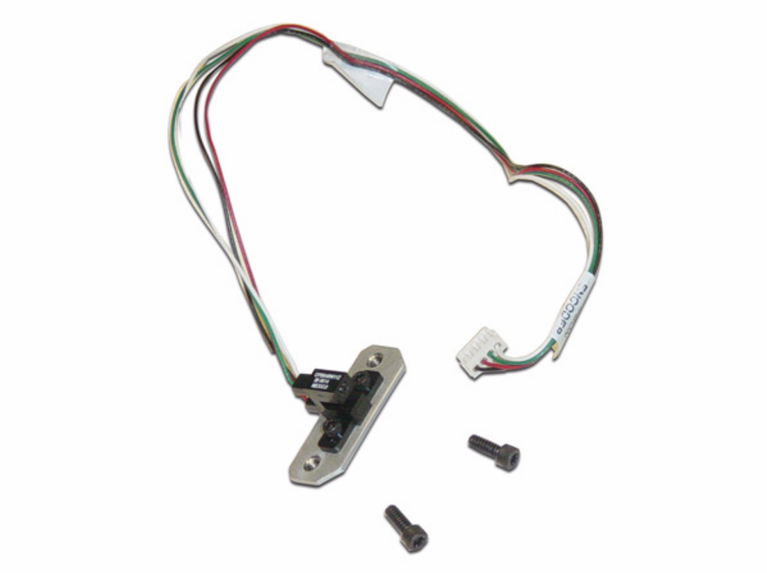


**Step 6.** Cut any associated cable ties to free the Ribbon Encoder Sensor.

**Step 7.** If not already disconnected, remove the RIBBON ENCODER Connector from J31 on the Main PCBA.

**Step 8.** From the rear of the printer, slide the Ribbon Encoder Sensor out of its access hole.

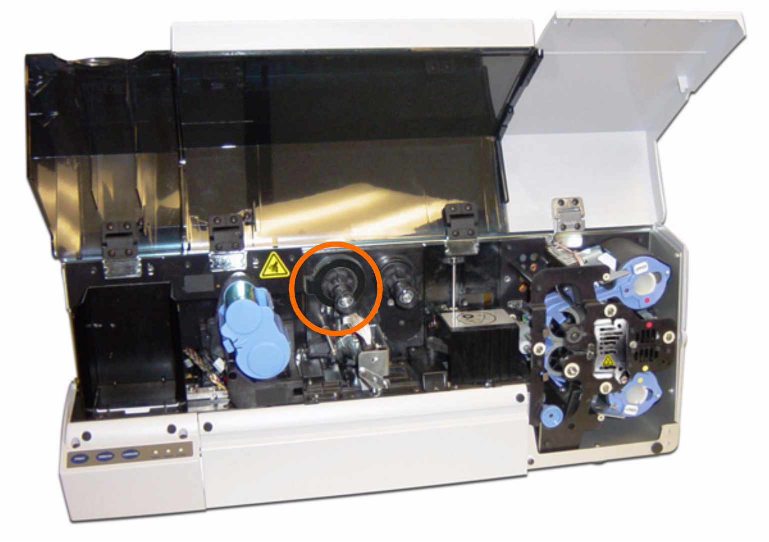
**Step 9.** Remove the Ribbon Encoder Sensor.



# 5.20 Ribbon Payout Spindle

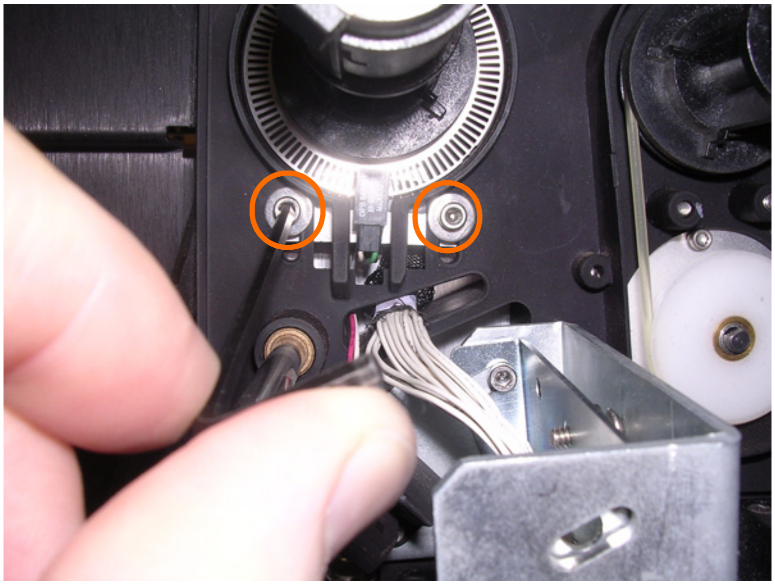
## 5.20.1 Removal

**Step 1.** Locate the Ribbon Payout Spindle.



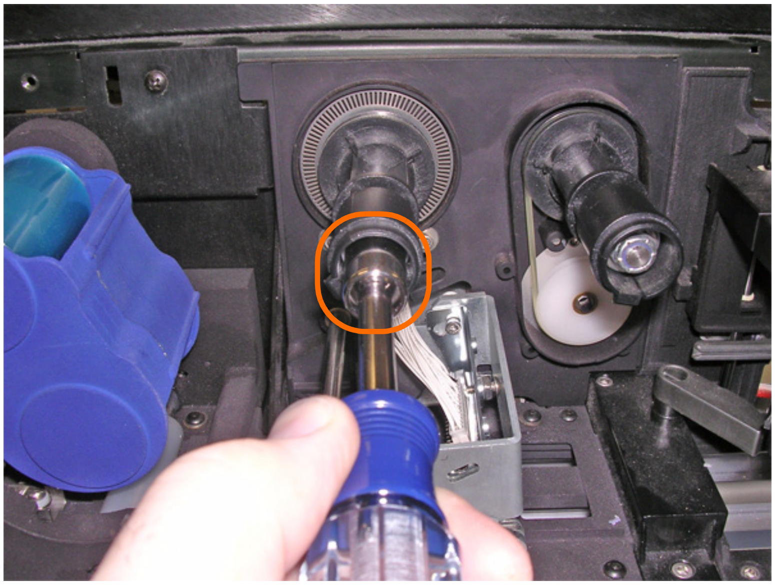
**Step 2.** Remove the RFID Antenna Cover. Note that the cover snaps in place.

**Step 3.** With a 7/64 hex driver, loosen the two screws that hold the Ribbon Encoder Sensor to the Frame.



**Step 4.** Slide the sensor down to clear the encoder wheel.

**Step 5.** With a 7/16 socket wrench, remove the lock nut from the Ribbon Payout Spindle.



**Step 6.** Slide the spindle off the shaft.

**Step 7.** Carefully slide the clutch parts out of the spindle.

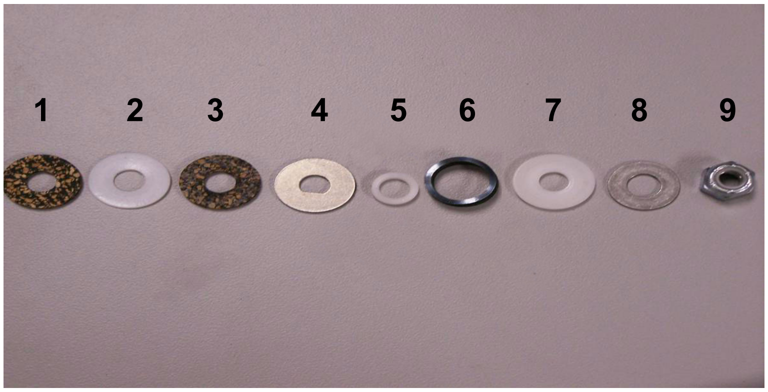
**Step 8.** Remove the three screws holding the Encoder Wheel to the Spindle, and set the Encoder Wheel aside.

**Step 9.** Set the Spindle aside.

## 5.20.2 Replacement

**Step 1.** Attach the Encoder Wheel to the replacement Spindle.

**Step 1.** Install the clutch parts in the order indicated.



**Step 2.** Slide the spindle, with the clutch parts installed, onto the spindle shaft.

**Step 3.** Loosely tighten the lock nut.

**Step 4.** Slide the Ribbon Encoder Sensor up and into its original position.

**Step 5.** With a 7/64 hex driver, tighten the two screws that hold the Ribbon Encoder Sensor to the Frame.

**Step 6.** Install the RFID Antenna Cover. Note that the cover snaps in place.

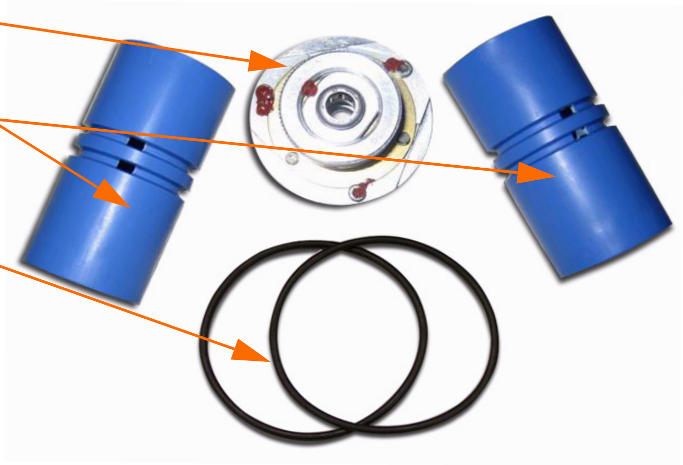
**Step 7.** Set the torque of the clutch; see Section 5.20.3.

## 5.20.3 Adjustment

To perform the procedure ensure you have a Clutch Burn-In Tool Kit, a 7/16” nut driver, and the **IDPrint** test and adjustment program.

The Clutch Burn-In Tool Kit, P/N: 105927-430, consists of:

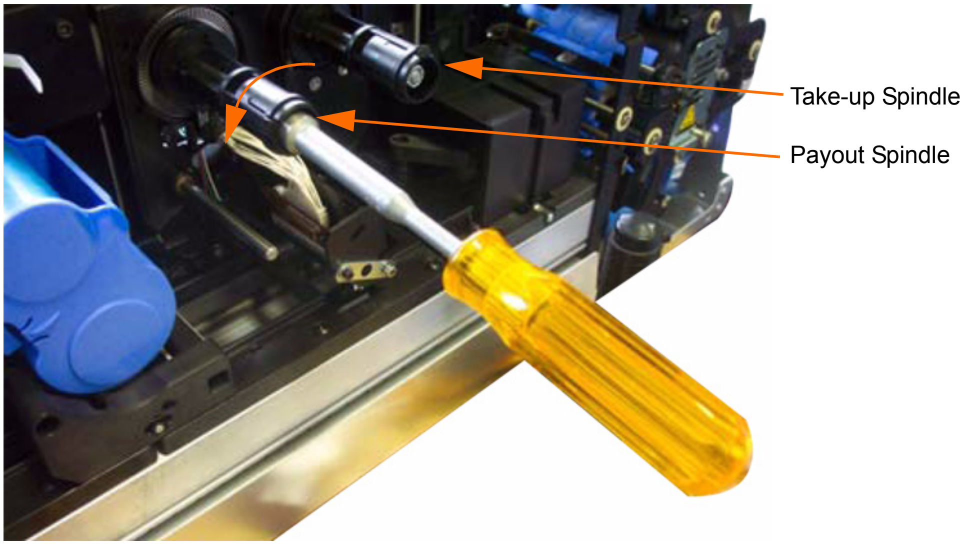
- Clutch Pulley Assembly
- Grooved Splined Cores (2)
- O-rings (2)



**Step 1. Find Low Ribbon Torque.**

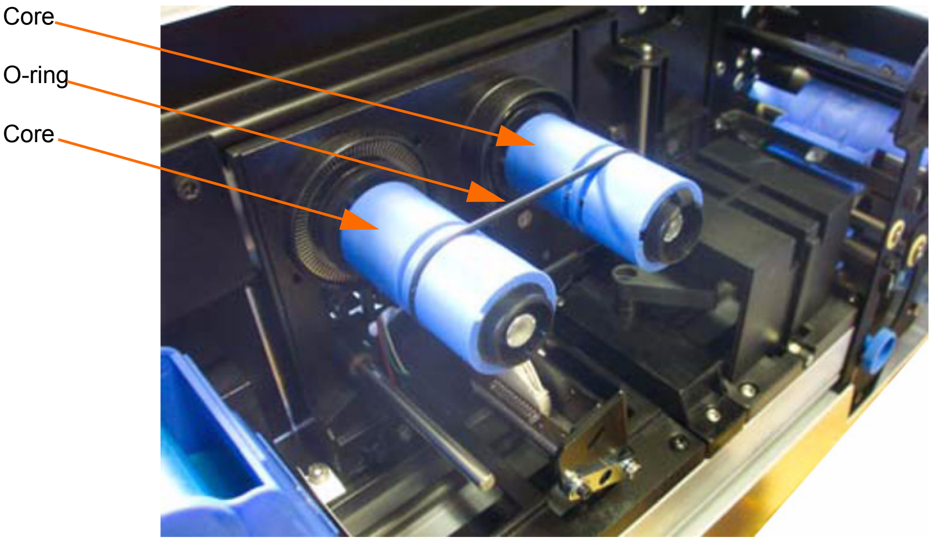
**a.** Plug in and power up the printer

**b.** Ensure the Payout Spindle rotates freely.



**c.** Ensure that there is very little end-to-end play (detent) in the Take-up Spindle; adjust the take-up spindle nut as required.

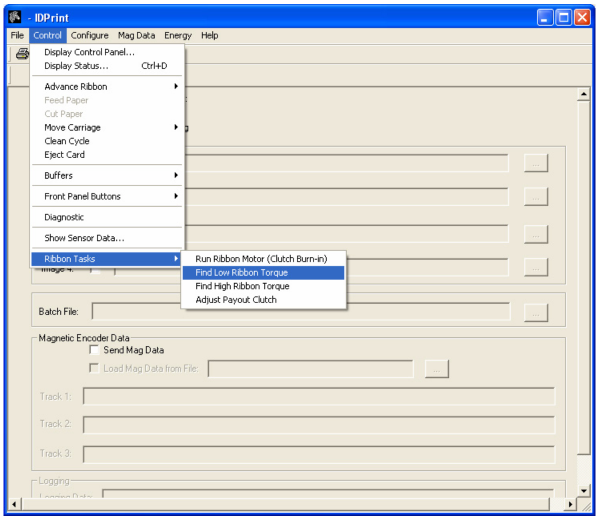
**d.** Install the two Grooved Splined Cores.


Core
O-ring
Core

**e.** Install the one of the O-ring in the front slots on the two cores.

**f.** Start IDPrint.

**g.** Select *Control* > *Ribbon Tasks* > *Find Low Ribbon Torque*:

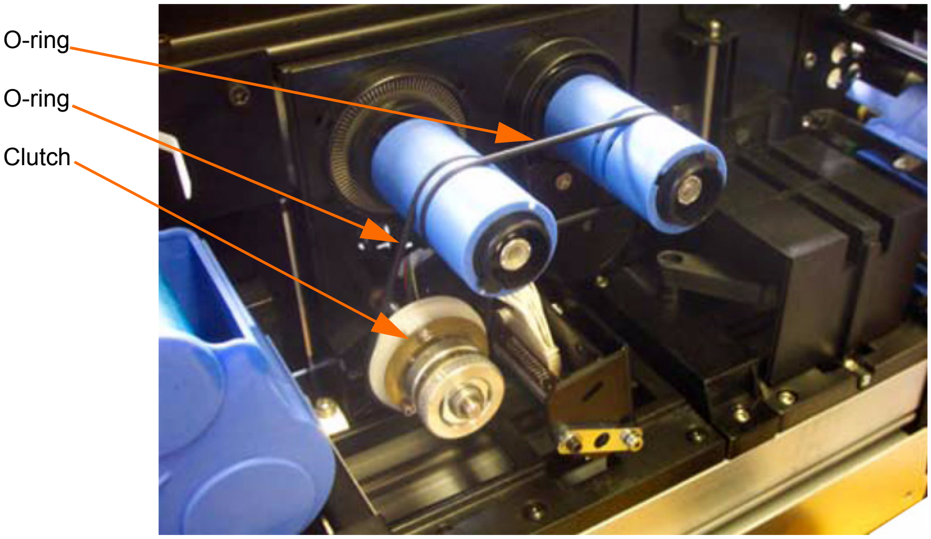

- IDPrint
File
Control
Configure
Mag Data
Energy
Help
Display Control Panel...
Display Status... Ctrl+D
Advance Ribbon
Feed Paper
Cut Paper
Move Carriage
Clean Cycle
Eject Card
Buffers
Front Panel Buttons
Diagnostic
Show Sensor Data...
Ribbon Tasks
Run Ribbon Motor (Clutch Burn-in)
Find Low Ribbon Torque
Find High Ribbon Torque
Adjust Payout Clutch
Batch File:
Magnetic Encoder Data
☐ Send Mag Data
☐ Load Mag Data from File:
Track 1:
Track 2:
Track 3:
Logging

**h.** Observe the two cores rotate counterclockwise for approximately two minutes.

**i.** When the motor stops turning, go to the next step.

## Step 2. Find High Ribbon Torque

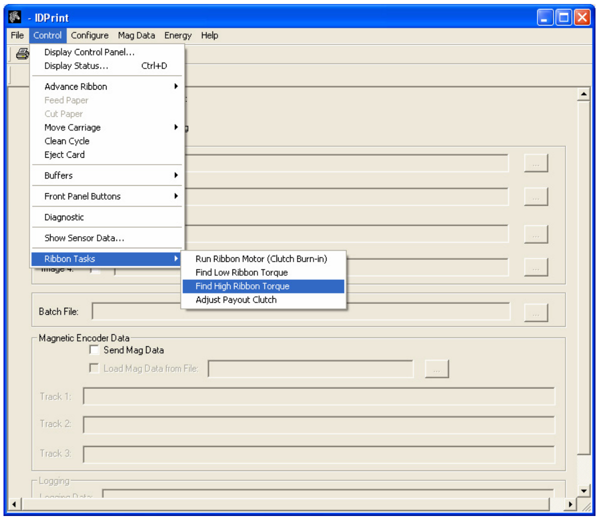
**a.** Place the Clutch onto the Guide Shaft. Note that you may have to move the Printhead down to access the Guide Shaft.


O-ring
O-ring
Clutch

**b.** Place one O-ring around the Clutch (in the rear slot) and around the left core (in the rear slot).

**c.** Install the other O-ring in the front slots on the two cores.

**d.** From the IDPrint screen, select *Control* > *Ribbon* Tasks > *Find High Ribbon Torque*:


- IDPrint
File
Control
Configure
Mag Data
Energy
Help
Display Control Panel...
Display Status... Ctrl+D
Advance Ribbon
Feed Paper
Cut Paper
Move Carriage
Clean Cycle
Eject Card
Buffers
Front Panel Buttons
Diagnostic
Show Sensor Data...
Ribbon Tasks
Run Ribbon Motor (Clutch Burn-in)
Find Low Ribbon Torque
Find High Ribbon Torque
Adjust Payout Clutch
Batch File:
Magnetic Encoder Data
☐ Send Mag Data
☐ Load Mag Data from File:
Track 1:
Track 2:
Track 3:
Logging

**e.** Observe the two cores rotate counterclockwise for approximately two minutes.

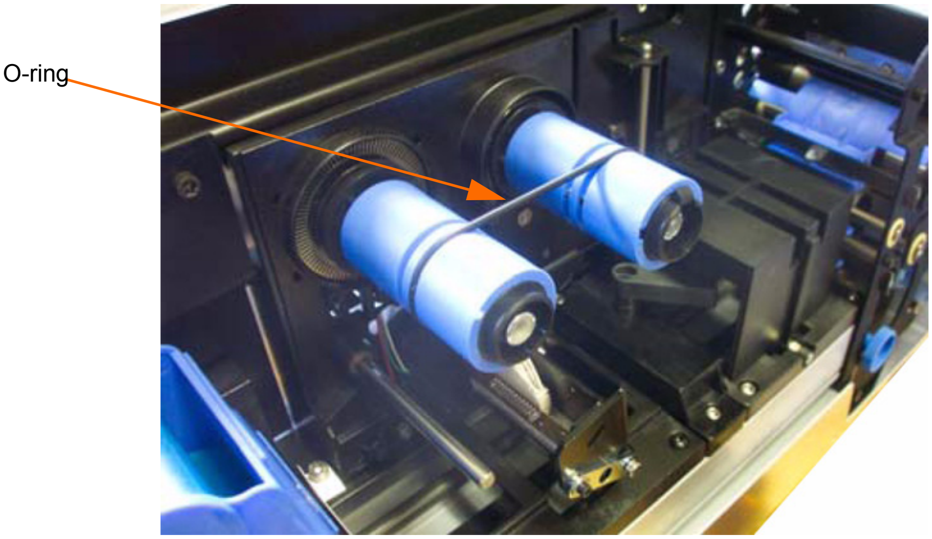
**f.** When the motor stops turning, go to the next step.

### Step 3. Run Ribbon Motor (Clutch Burn-In)

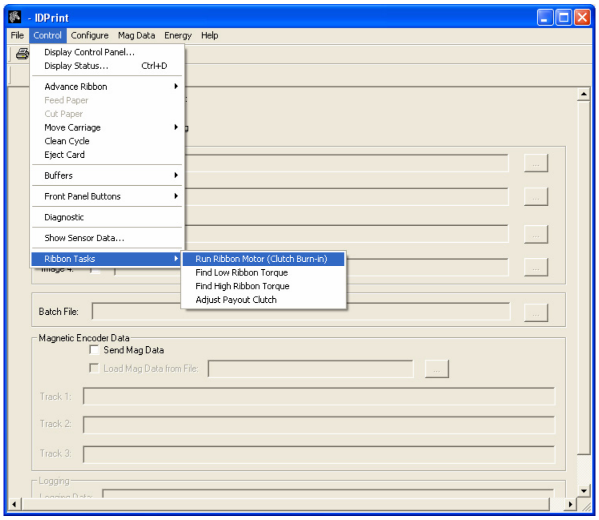
**a.** Remove the O-ring in the front slots on the cores.

**b.** Remove the Clutch and associated O-ring.

**c.** Reinstall an O-ring in the front slots on the two cores.

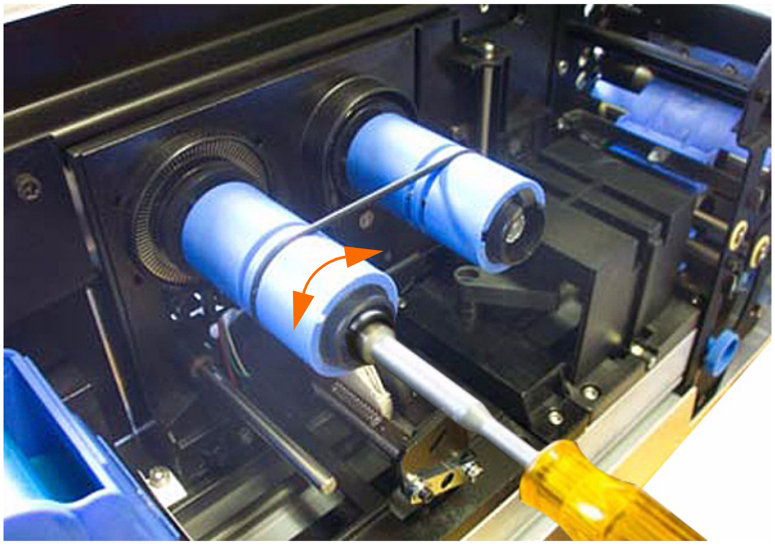


**d.** From the IDPrint screen, select *Control* > *Ribbon* Tasks > *Run Ribbon Motor (Clutch Burn-In)*:


- IDPrint
File
Control
Configure
Mag Data
Energy
Help
Display Control Panel...
Display Status... Ctrl+D
Advance Ribbon
Feed Paper
Cut Paper
Move Carriage
Clean Cycle
Eject Card
Buffers
Front Panel Buttons
Diagnostic
Show Sensor Data...
Ribbon Tasks
Run Ribbon Motor (Clutch Burn-in)
Find Low Ribbon Torque
Find High Ribbon Torque
Adjust Payout Clutch
Batch File:
Magnetic Encoder Data
Send Mag Data
Load Mag Data from File:
Track 1:
Track 2:
Track 3:
Logging

**e.** Observe the two cores rotate counterclockwise.

**f.** Tighten the payout spindle nut until the O-ring bows, then back off slightly.



**g.** Listen to the “hum” of the motor.

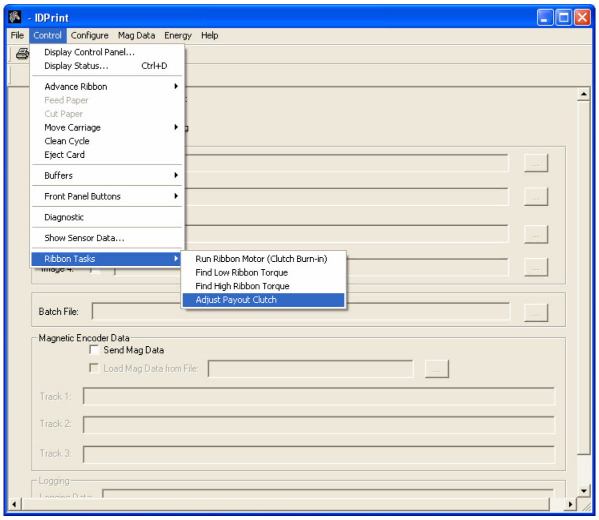
**h.** Adjust the tightness of the payout spindle nut until the motor hum is constant.

**i.** This test takes approximately ten minutes. When the motor stops turning, go to the next step.

### Step 4. Adjust Payout Clutch

**Note •** You may need to repeat this step until you are satisfied with the adjustment.

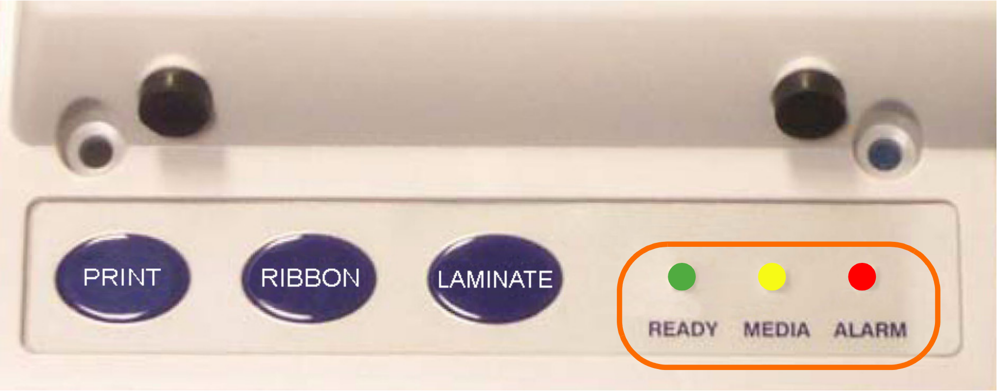
**a.** From the IDPrint screen, select *Control* > *Ribbon* Tasks > *Adjust Payout Clutch:*


- IDPrint
File
Control
Configure
Mag Data
Energy
Help
Display Control Panel…
Display Status… Ctrl+D
Advance Ribbon
Feed Paper
Cut Paper
Move Carriage
Clean Cycle
Eject Card
Buffers
Front Panel Buttons
Diagnostic
Show Sensor Data…
Ribbon Tasks
Run Ribbon Motor (Clutch Burn-in)
Find Low Ribbon Torque
Find High Ribbon Torque
Adjust Payout Clutch
Batch File:
Magnetic Encoder Data
☐ Send Mag Data
☐ Load Mag Data from File:
Track 1:
Track 2:
Track 3:
Logging

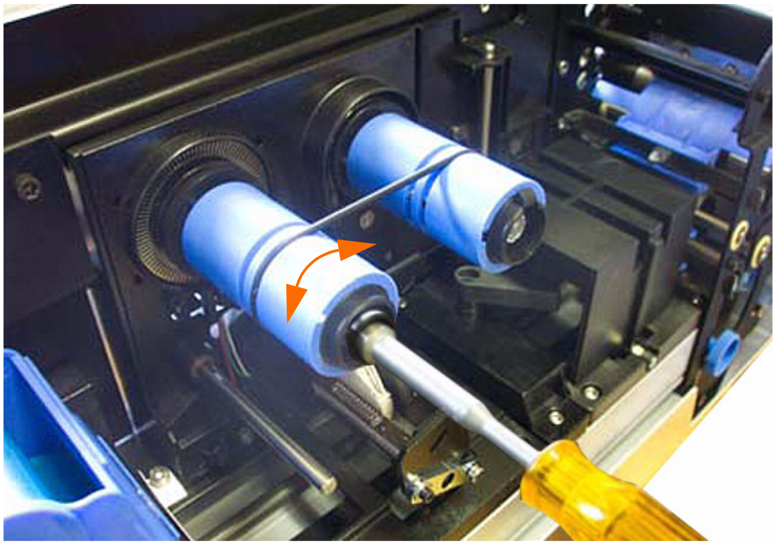
**b.** Observe the two cores rotate counterclockwise.

**c.** Observe the panel lights.

**Note •** The panel lights should flash an equal amount of time between Green (Ready) and Red (Alarm) -- the optimum condition would be Yellow (Media) on all the time.



**d.** Adjust the payout spindle nut as required -- if Red, tighten; if Green, loosen.



**e.** When the motor stops turning and you are satisfied with the adjustment, go to the next step.

**Step 5.** Remove the O-ring and the two Grooved Splined Cores.

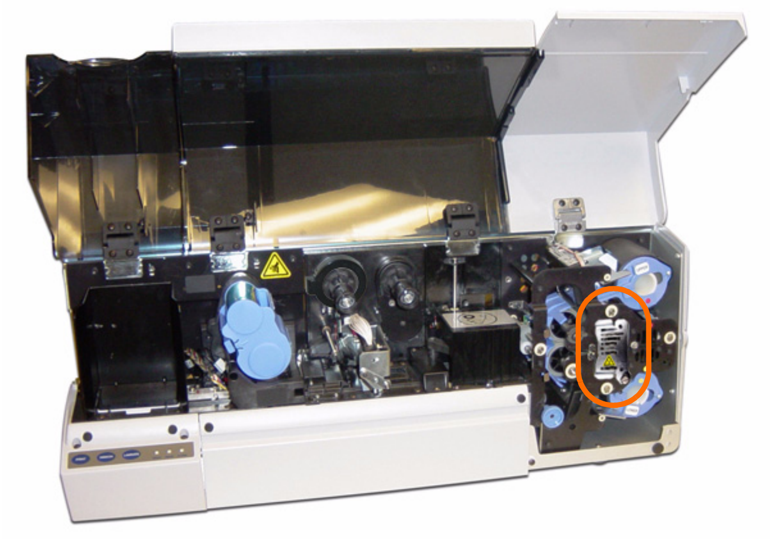
**Step 6.** Load the Ribbon.

**Step 7.** Power Cycle the Printer.

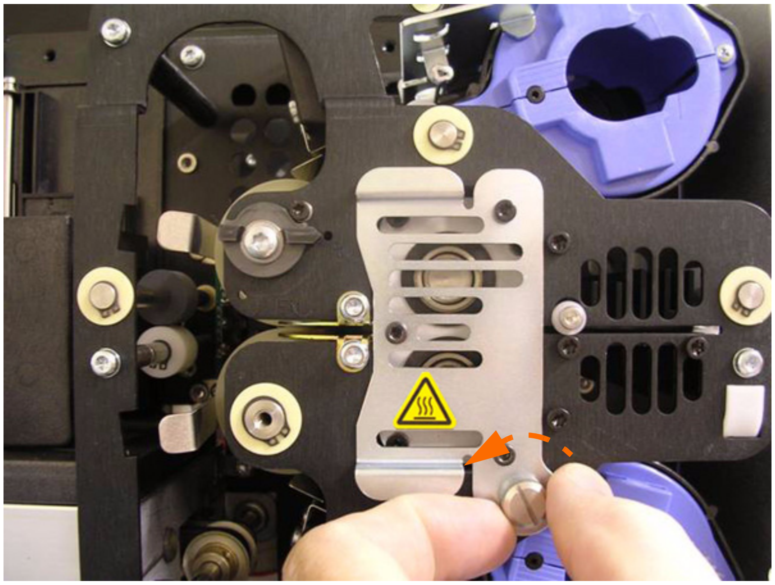
# 5.21 Laminator Heater Cartridge and Heated Roller

**Hot Surface** • Wait 10 - 20 minutes for the printer to cool down.

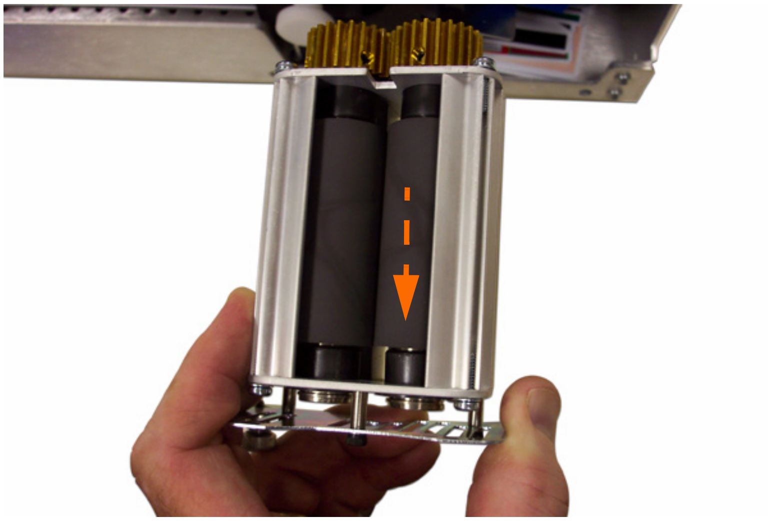
**Step 1.** Locate the Heated Rollers.



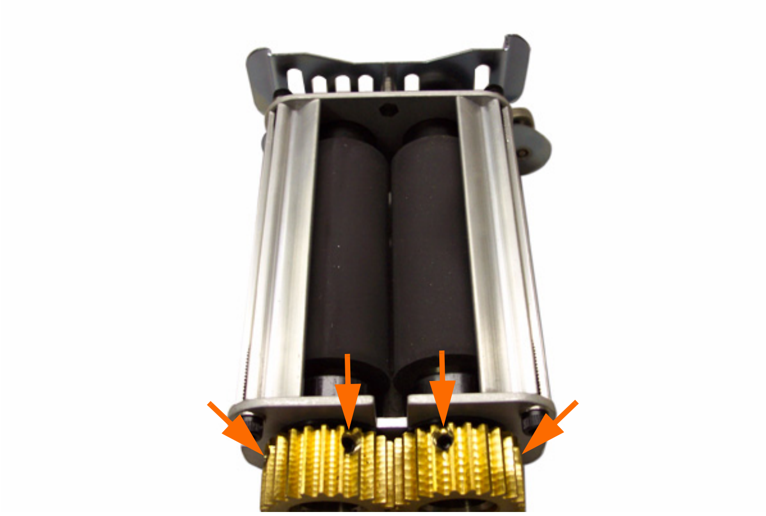
**Step 2.** Loosen the thumb screw that holds the Laminator Heater Cartridge in place.



**Step 3.** Remove the Laminator Heater Cartridge.

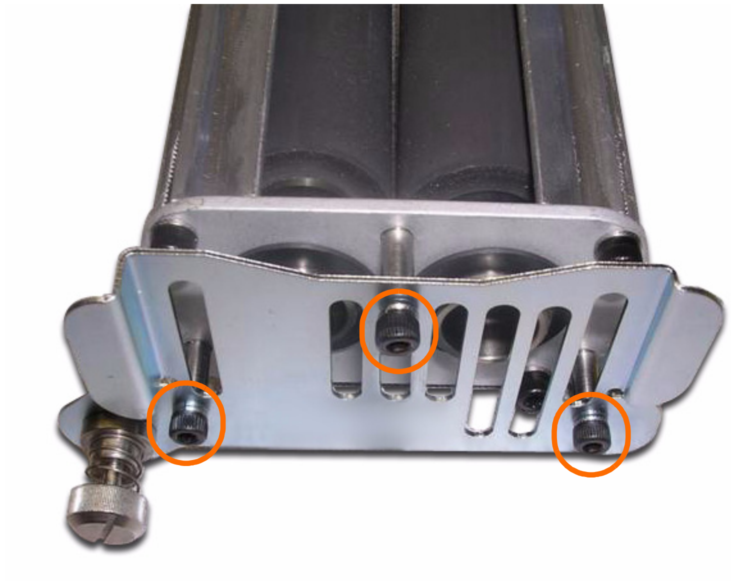


**Step 4.** With a 1/16 hex driver, *loosen* the set screws that hold the two brass gears to their respective shafts. Note that each gear has two set screws.



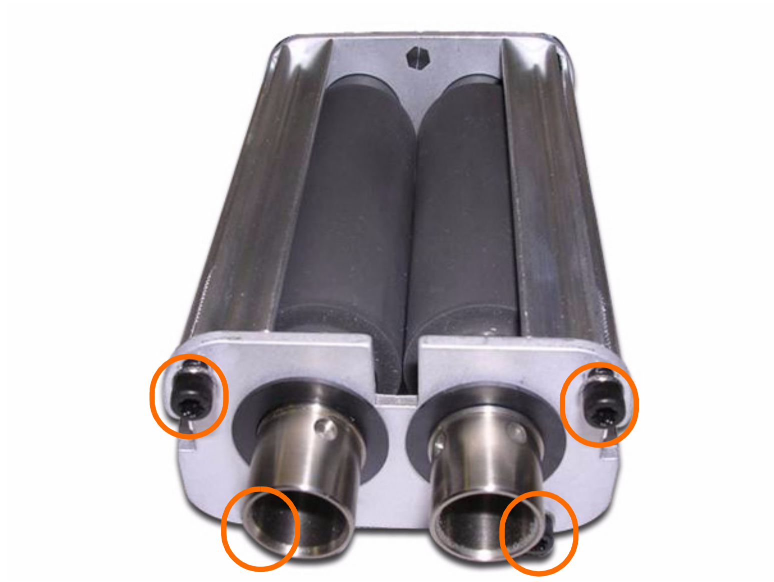
**Step 5.** Remove the two brass gears.

**Step 6.** With a TORX T10 driver, remove the three screws that hold the front bracket in place.

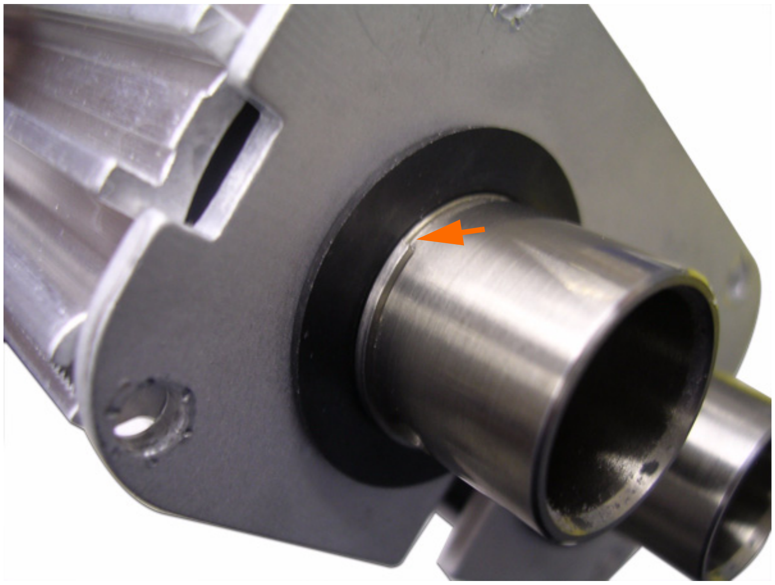


**Step 7.** Remove the front bracket.

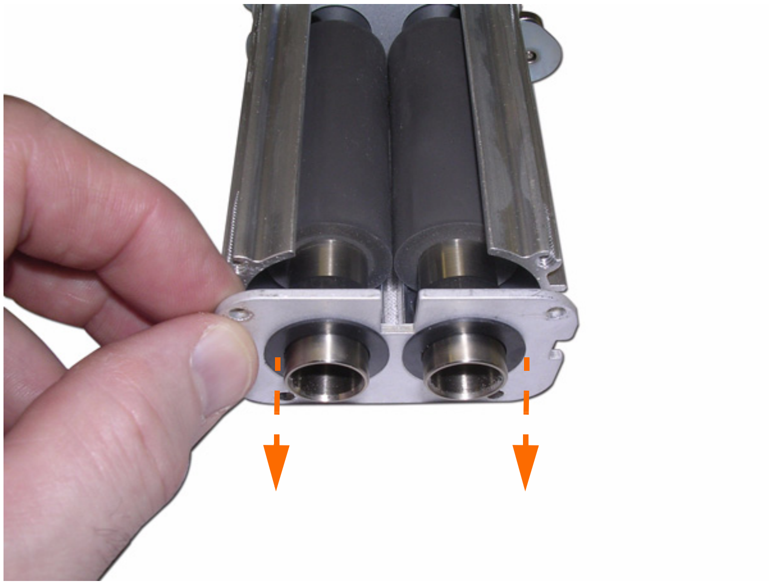
**Step 8.** With a TORX T15 driver, remove the four screws that hold the rear bracket in place.



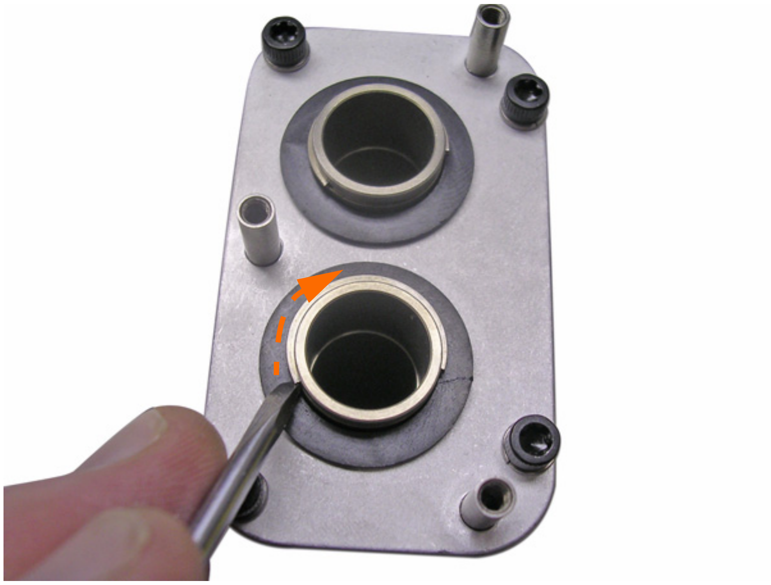
**Step 9.** With a small flat-blade screwdriver, remove the two C-rings.



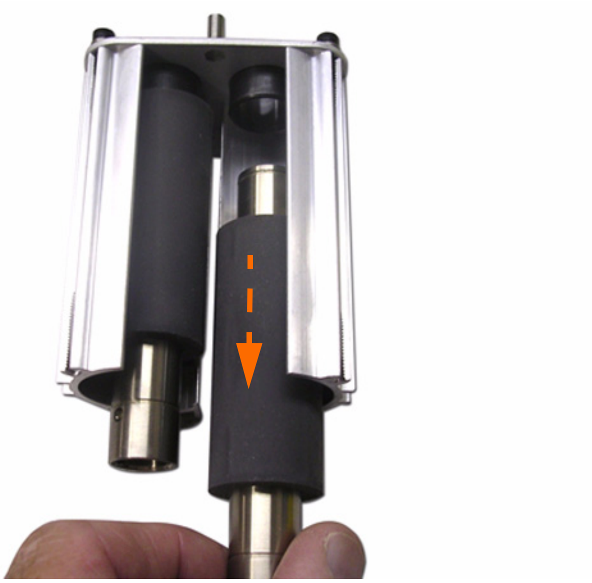
**Step 10.** Remove the rear bracket. Note that the two flanged bearings should remain in the rear bracket.



**Step 11.** From the front of the assembly, remove the C-ring that corresponds to the Heated Roller that needs replacing.



**Step 12.** From the rear of the assembly, remove the Heated Roller.



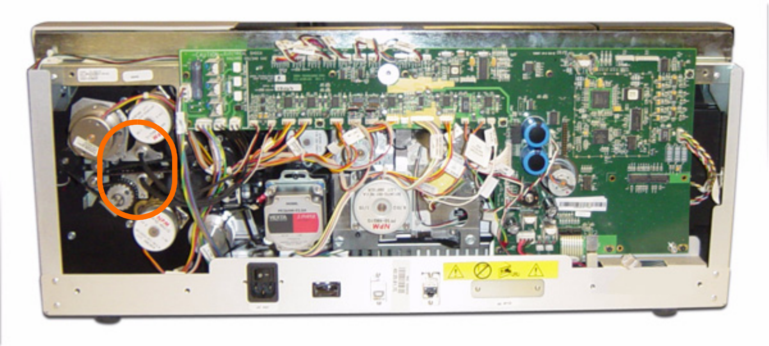
# 5.22 Heater Elements

## 5.22.1 Removal

**Hot Surface** • Wait 10 - 20 minutes for the printer to cool down.

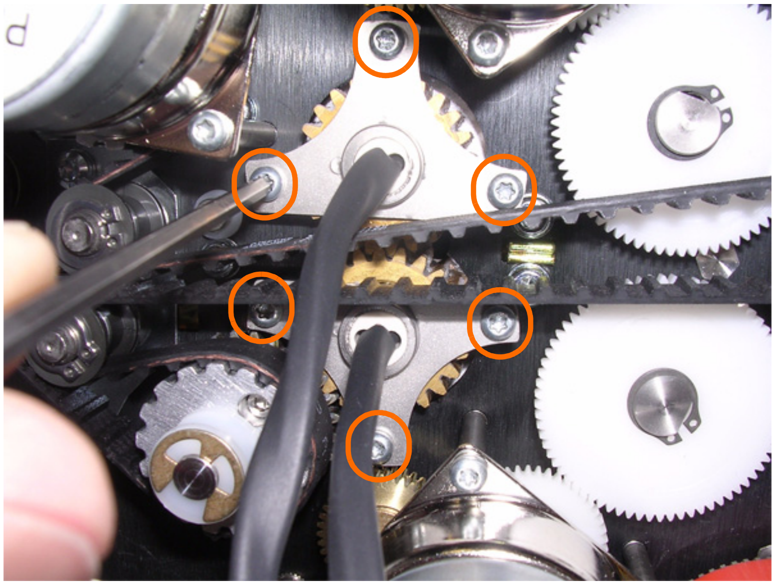
**Step 1.** If not already done, remove the Rear Cover (see Section 5.3). It is not necessary to remove the Main PCBA.

**Step 2.** Locate the Heater Elements.

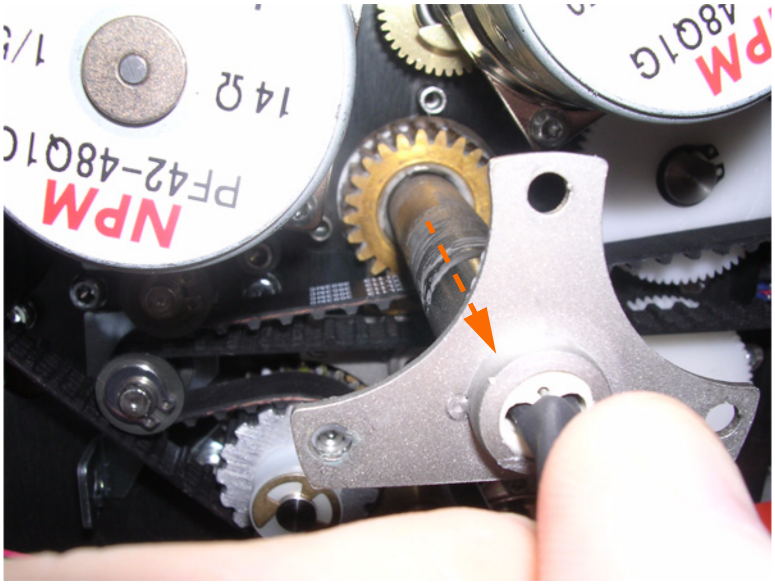


**Step 3.** Disconnect the Heater Elements from the Main PCBA (Remove the top heater from J42A and J43, and remove the bottom heater from J42B and J44).

**Step 4.** With a TORX T10 driver, remove the three screws that hold each heater to the Frame.

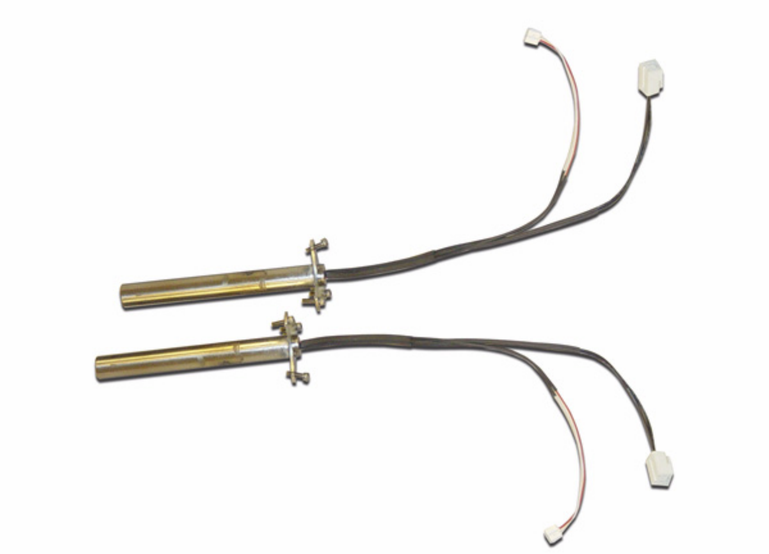


**Step 5.** Slide out the top Heater Element.



**Step 6.** Slide out the bottom Heater Element.

**Step 7.** Remove the Heater Elements.

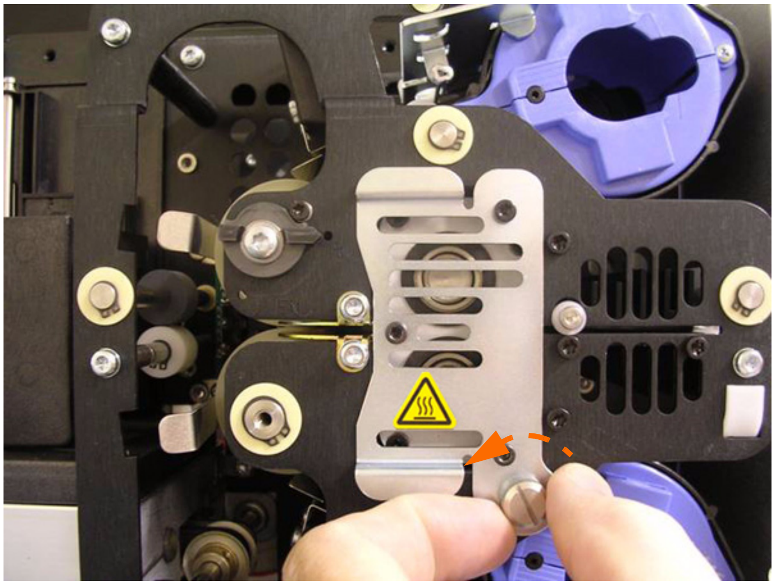


## 5.22.2 Replacement

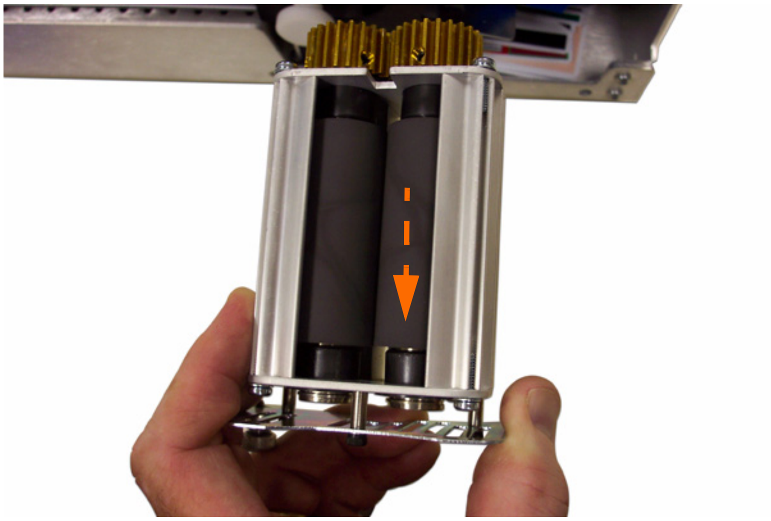
**Step 1.** Replace the Triflunox 722 (lubricant).

**Note •** Note that Triflunox 722 is a lubricant, which provides a tough coating that is extremely heat resistant while protecting against rust and oxidation at high temperatures.

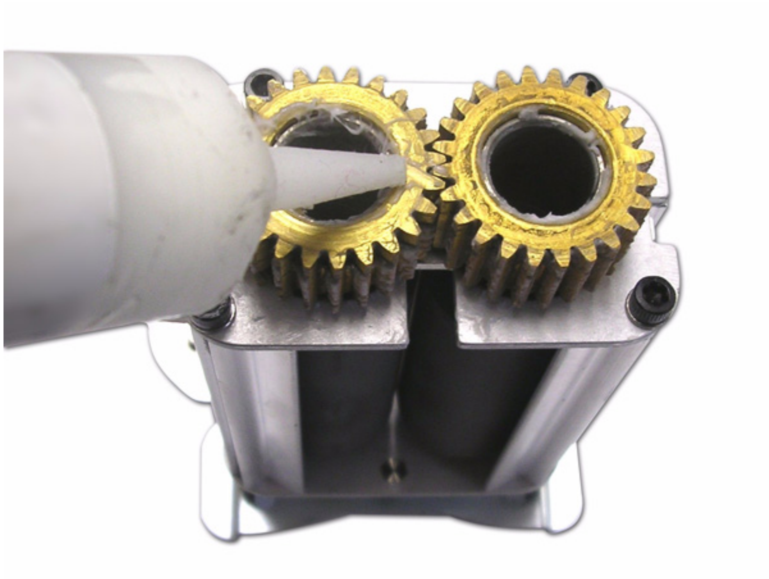
**a.** Loosen the thumb screw that holds the Laminator Heater Cartridge in place.



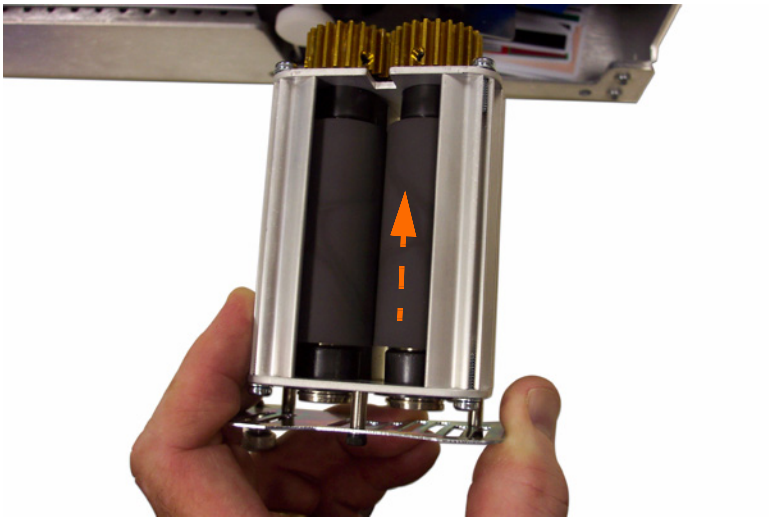
**b.** Remove the Laminator Heater Cartridge.



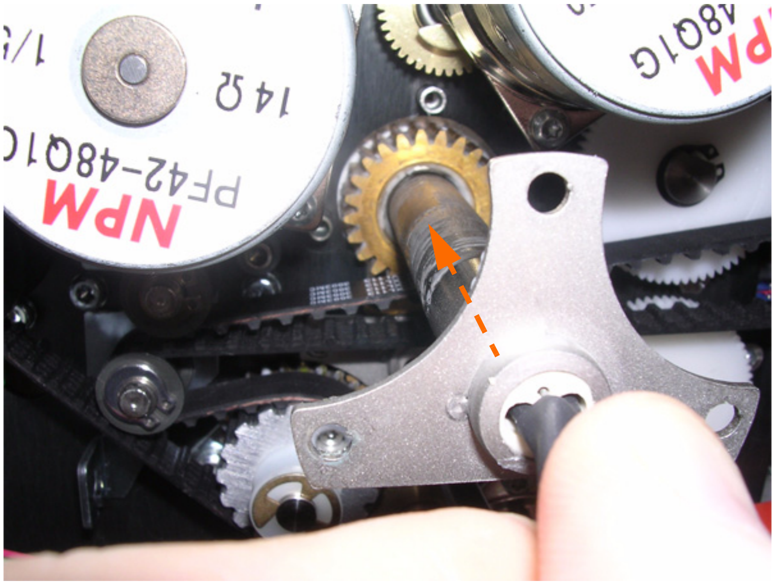
**c.** Turn the Laminator Heater Cartridge around, and brush Triflunox 722 all around toothed surfaces and inside both gears.



**d.** Reinstall the Laminator Heater Cartridge into the Laminator. Ensure that the gears mesh properly.

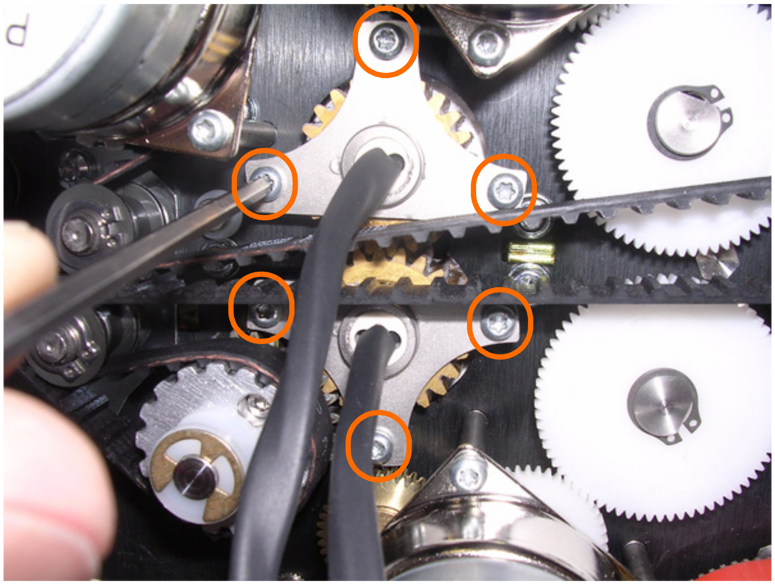


**Step 2.** Slide the Heater Elements into place. Ensure the top and bottom heaters are in their respective positions.



**Note •** In the next step, use the replacement screws that come in the Spare Parts Kit -- they have a dry-to-the-touch film applied to the threads which lock and seal the screws in place.

**Step 3.** With a TORX T10 driver, secure the three screws that hold each heater to the Frame. The screws must not be too tight (tighten, then back off 1/2 turn).



**Step 4.** Connect the Heater Elements to the Main PCBA.

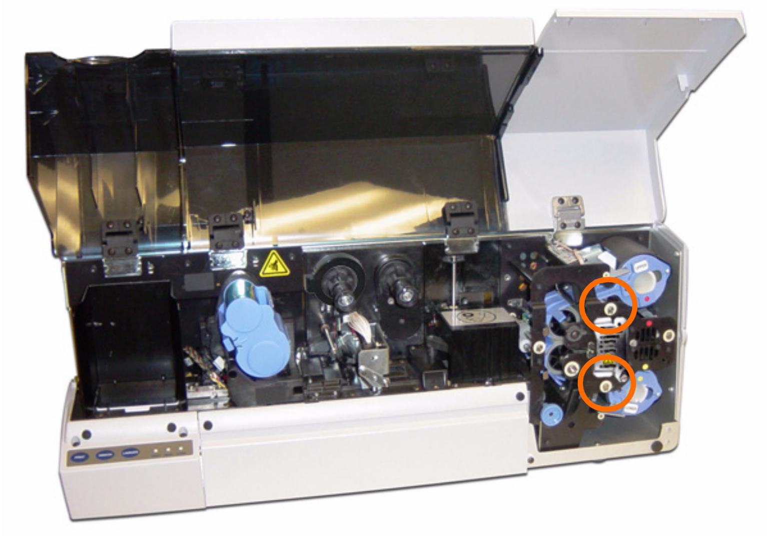
**Step 5.** Turn the printer around, and wipe away any Triflunox 722 that may have seeped out of the front of the Laminator Heater Cartridge.

# 5.23 Nip Rollers (Laminator)

## 5.23.1 Removal

**Step 1.** If not already done, remove the Rear Cover (see Section 5.3). It is not necessary to remove the Main PCBA.

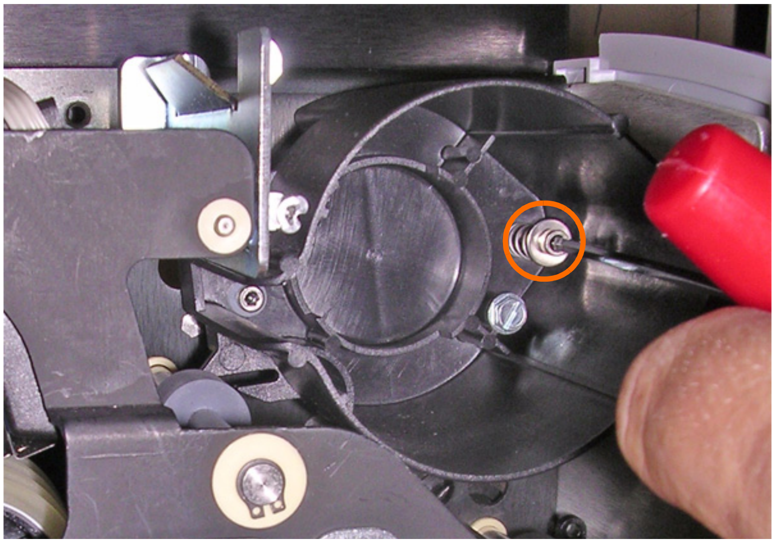
**Step 2.** Locate the Nip Rollers.



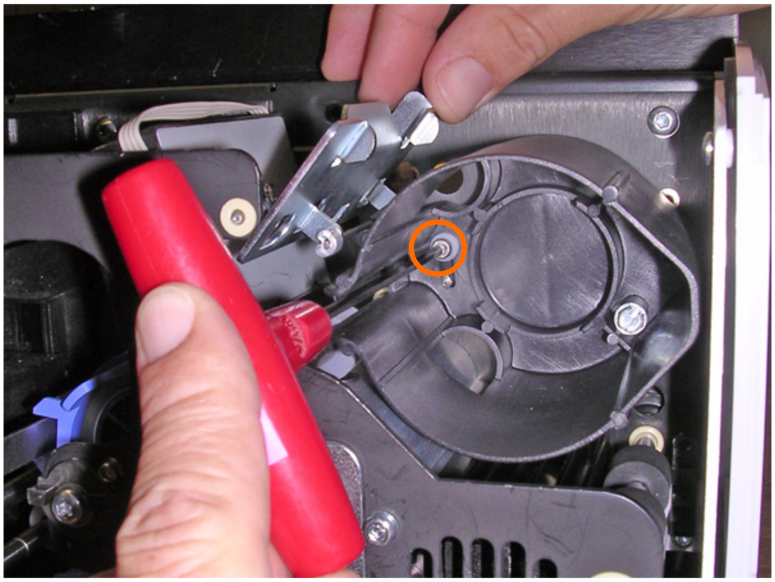
**Step 3.** Remove both Laminate Cassettes.

**Step 4.** Remove the Laminate Cassette Receivers (top and bottom).

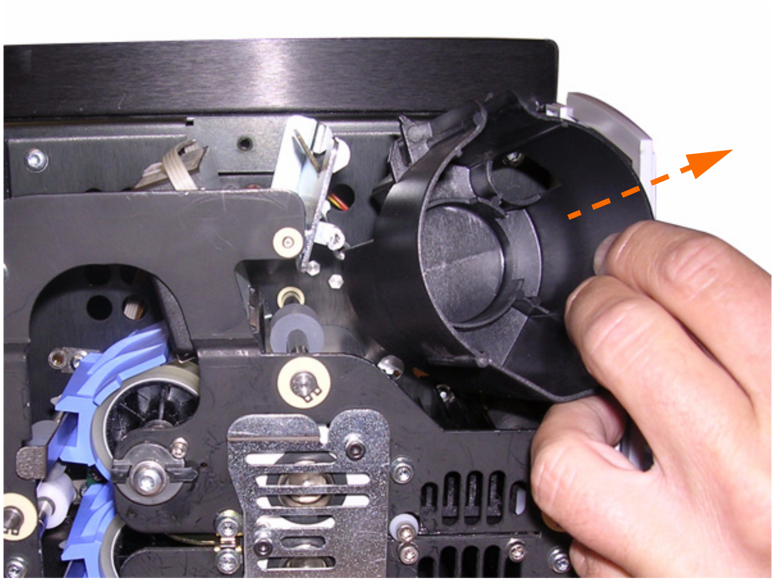
**a.** Use the 7/64” hex driver to remove both the top and bottom spring loaded cap screws. Be careful not to lose the screws and springs.



**b.** Use the 7/64” hex driver to remove the skew adjust screws from both the top and bottom cassette receivers.

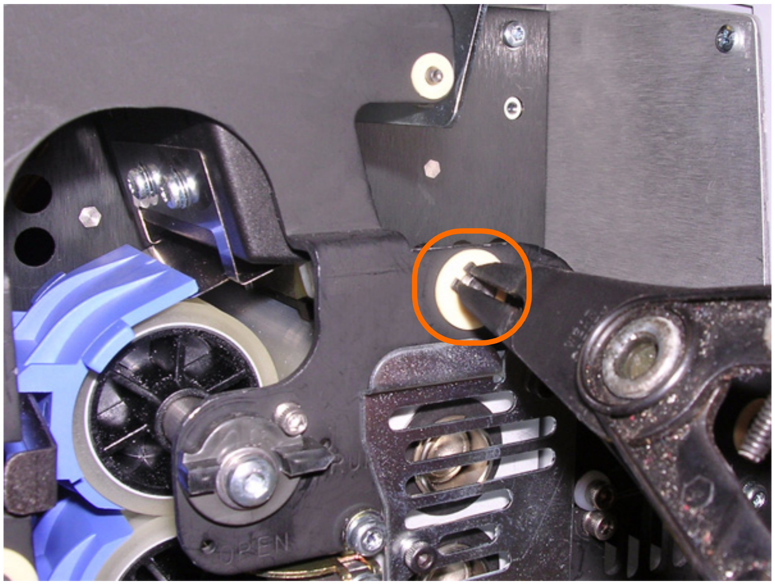


**c.** Remove the top Laminate Cassette Receiver.



**d.** Remove the bottom Laminate Cassette Receiver. Turn the cassette receiver clockwise until it can be easily removed from the printer.

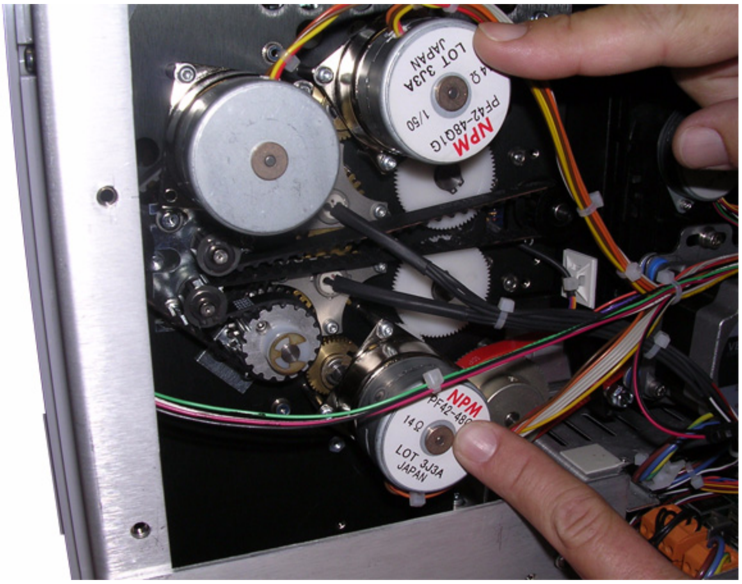
**Step 5.** With snap-ring pliers, remove the top snap ring that holds the nip roller shaft in place.



**Step 6.** With snap-ring pliers, remove the bottom snap ring that holds the nip roller shaft in place

**Step 7.** Turn the printer around.

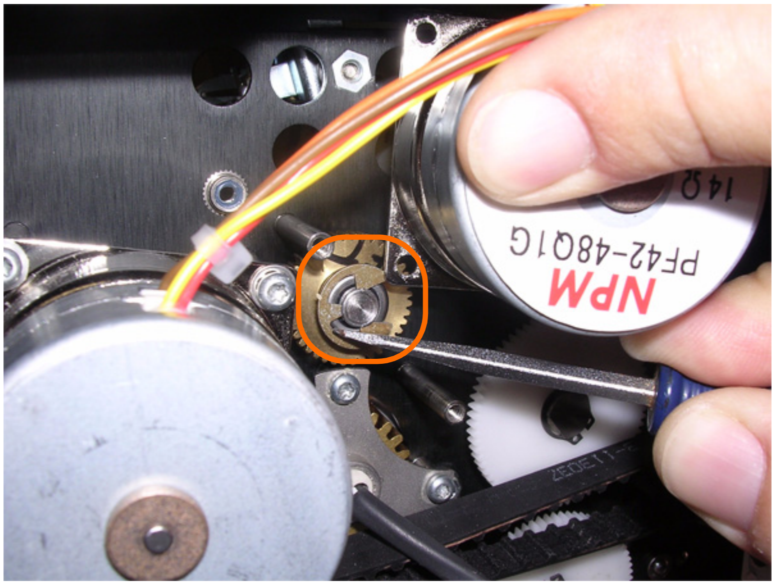
**Step 8.** With a TORX T10 driver, loosen both motors; i.e., remove two of the three screws for each motor, and just loosen the third screw.



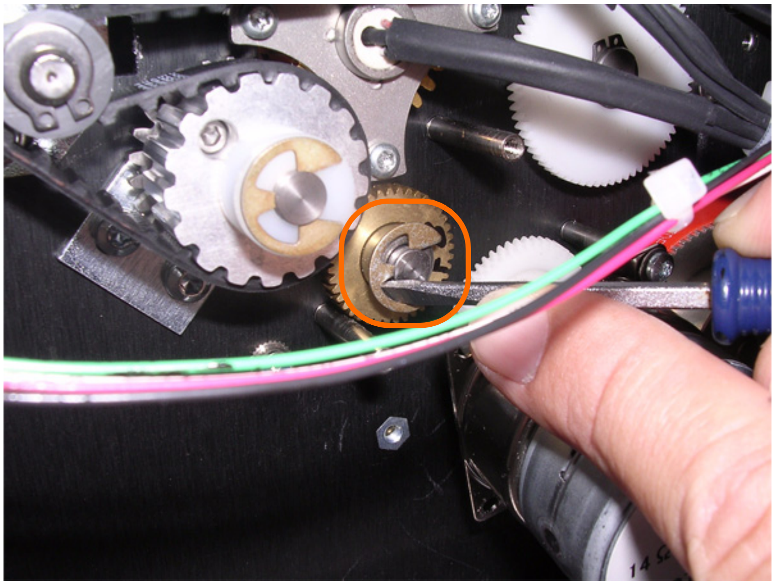
**Step 9.** Pivot the motors out of the way to access the Nip Rollers.

**Step 10.** With a flat-blade screwdriver, remove the E rings from each nip roller shaft.

**a.** Remove the top E-ring.

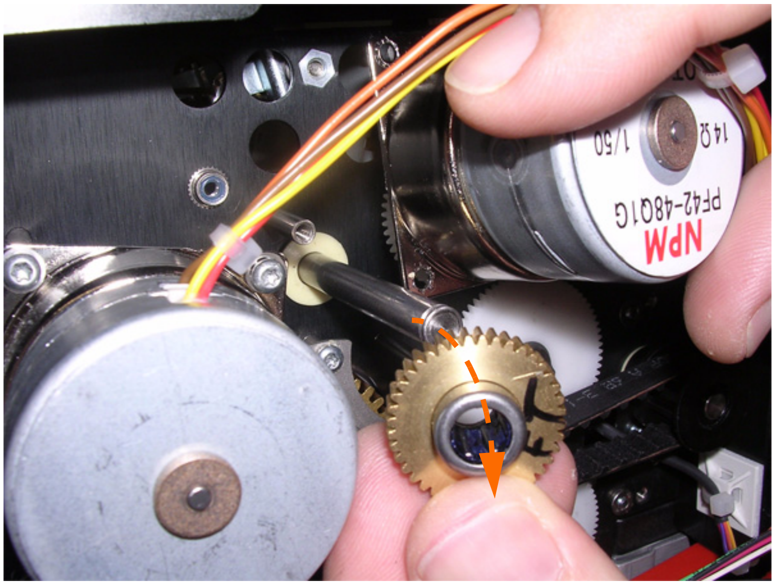


**b.** Remove the bottom E-ring.

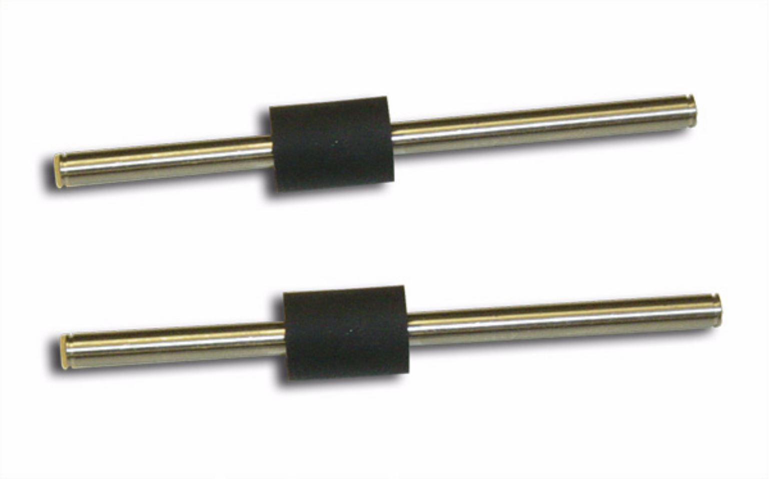


**Step 11.** Before removing the gears, mark each one for correct orientation when reinstalled; e.g., FT = front top and FB = front bottom.

**Step 12.** Slide the top and bottom gears off their respective shafts.



**Step 13.** Gently slide each shaft back, up, and out of the printer.

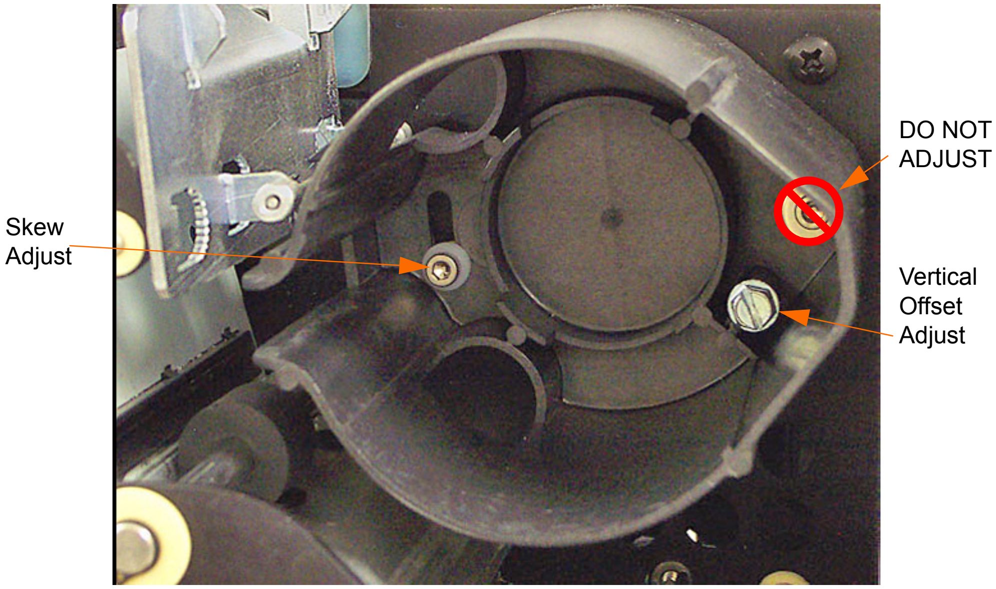


**Step 14.** Remove the Nip Rollers. Note that the long end of the shaft goes to the back of the printer when installing the replacement Nip Rollers.

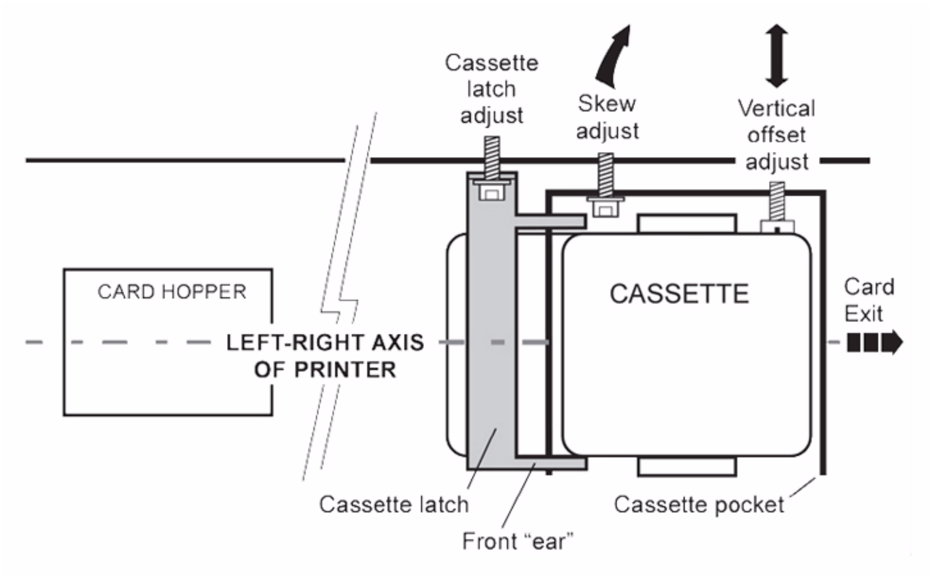
## 5.23.2 Adjustment

### Pocket Adjustment

Skew and vertical offset are adjusted by screws in the cassette pocket (7/64" hex wrench for skew, flat blade screwdriver for vertical offset, see diagram below).


Skew Adjust
DO NOT ADJUST
Vertical Offset Adjust

Before adjusting for skew or vertical offset, remember that there is significant interaction between the latch and the adjusting screws in the pocket.

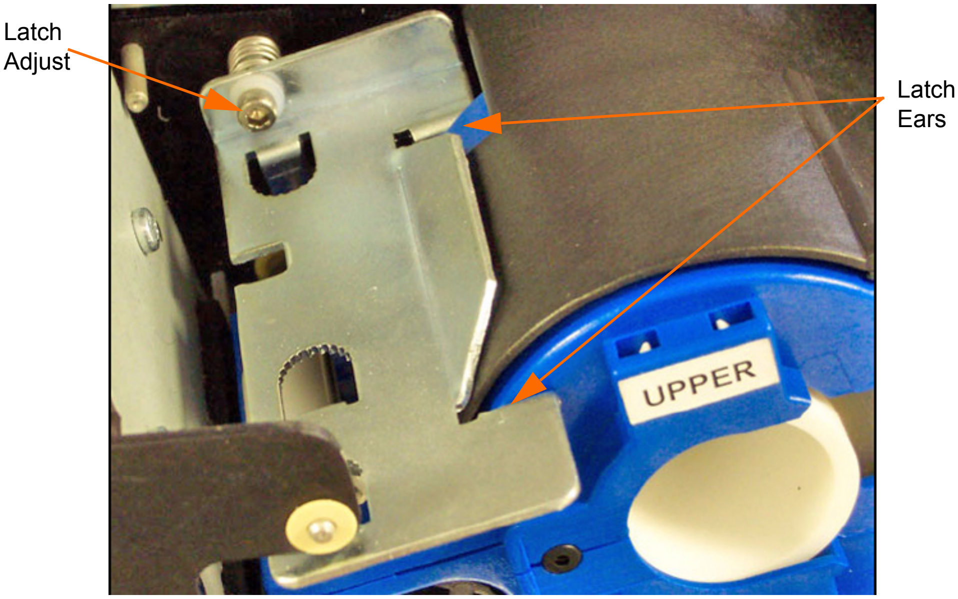

Cassette latch adjust
Skew adjust
Vertical offset adjust
CARD HOPPER
LEFT-RIGHT AXIS OF PRINTER
CASSETTE
Card Exit
Cassette latch
Front “ear”
Cassette pocket

**Important •** Always adjust the latch after adjusting either of the screws in the pocket.

## Latch Adjustment

The cassette is held in place by two ears on the cassette latch. Using a piece of 1 mil laminate as a feeler gauge, set the *front* ear close to, but not touching, the cassette. A hex head screw (arrowed) sets front-back position of the latch.

Adjust the latch position using a 7/64" hex wrench.



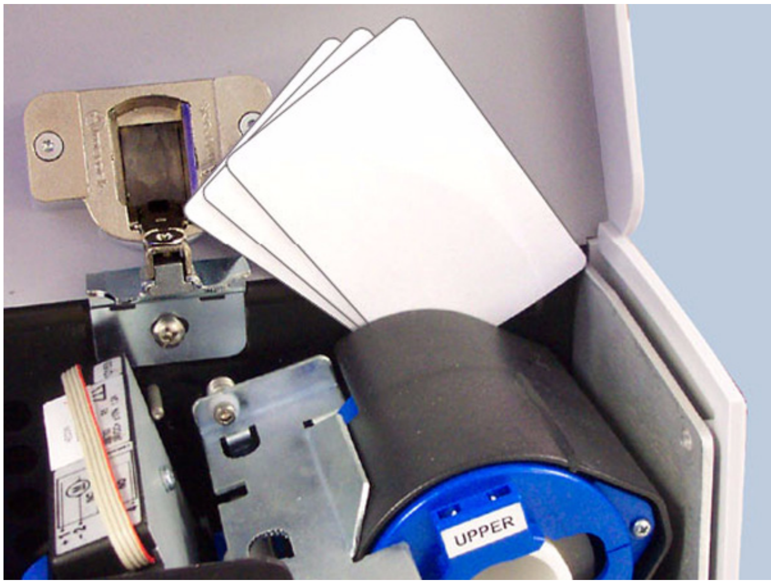
## Cassette Pocket Reset

Skew is caused by misalignment of the laminate cassette relative to the left-right axis of the printer, looking down on the printer from above. The skew adjust screw causes the pocket to rotate relative to the left-right axis. The vertical offset adjust screw controls the depth of the cassette in the pocket. Note that the front ear of the latch must be in close contact with the cassette, without changing its position.

Reset the cassette pocket like this if the pocket has been replaced, or if the laminate is grossly misaligned.

**Step 1.** Back off the vertical offset adjust screw, skew adjust screw, and cassette latch adjust screws.

**Step 2.** Using three CR-80 cards [total thickness 0.090" (2.3 mm)] as a feeler gauge in the gap between the pocket and back plate, adjust for skew and vertical offset until the gap is an even 0.090" across the width of the pocket.

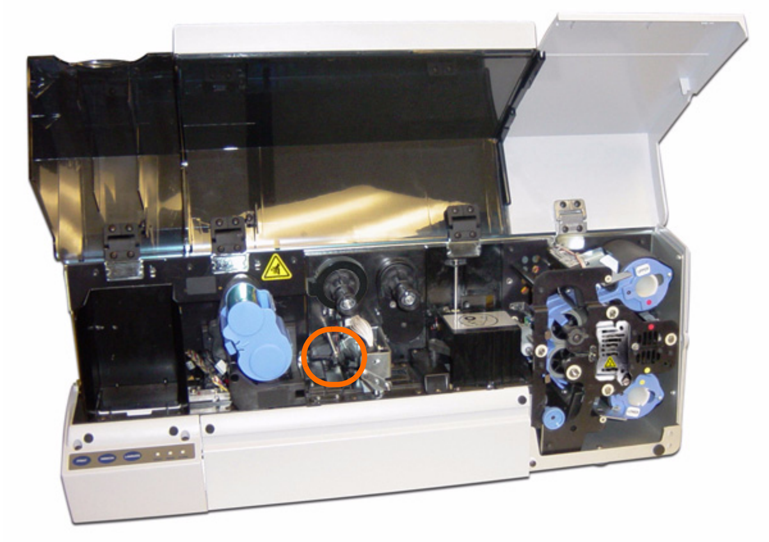


**Step 3.** With a cassette in the pocket, adjust the latch screw so that the latch’s front ear is snug to the cassette but does not shift it out of position.

The pocket is now in its default position -- as assembled in production before adjustments in final test.

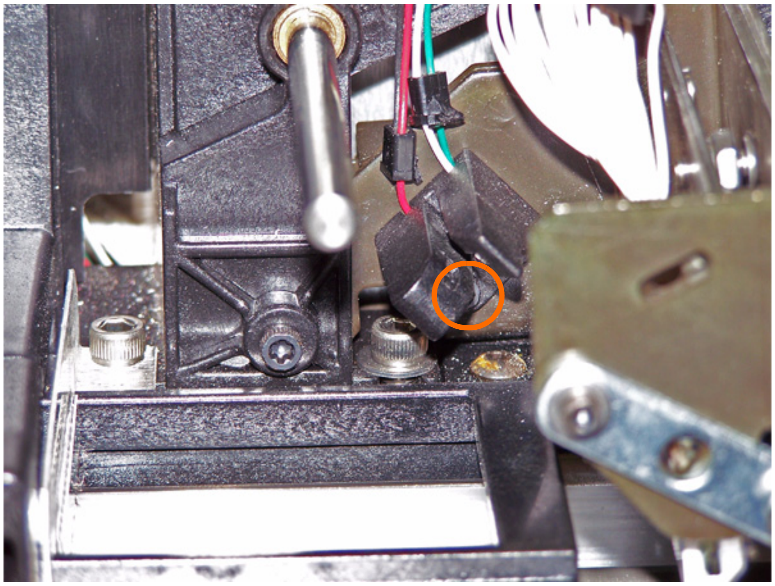
# 5.24 Color Sensor Assembly

**Step 1.** Locate the Color Sensor Assembly.



**Step 2.** If not already done, remove the Rear Cover (see Section 5.3) and the Main PCBA (see Section 5.5).

**Step 3.** With a TORX T10 driver, remove the screw holding the Color Sensor Assembly in place.

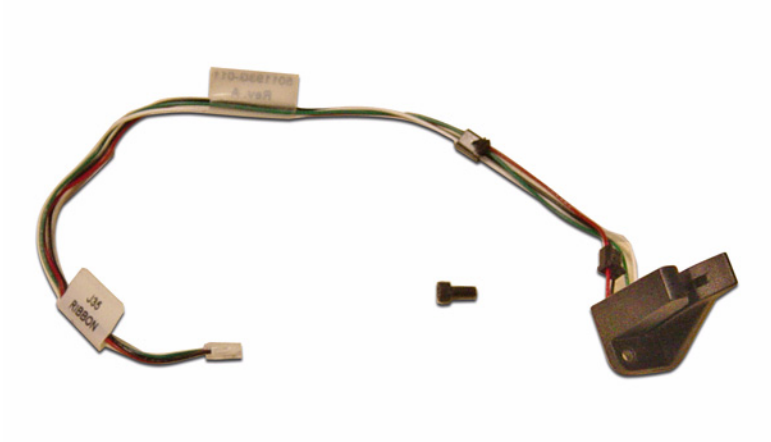


**Step 4.** Turn the printer around (view from back).

**Step 5.** Cut the associated cable tie(s).

**Step 6.** If not already disconnected, remove the RIBBON SYNC Connector from J35 on the Main PCBA.

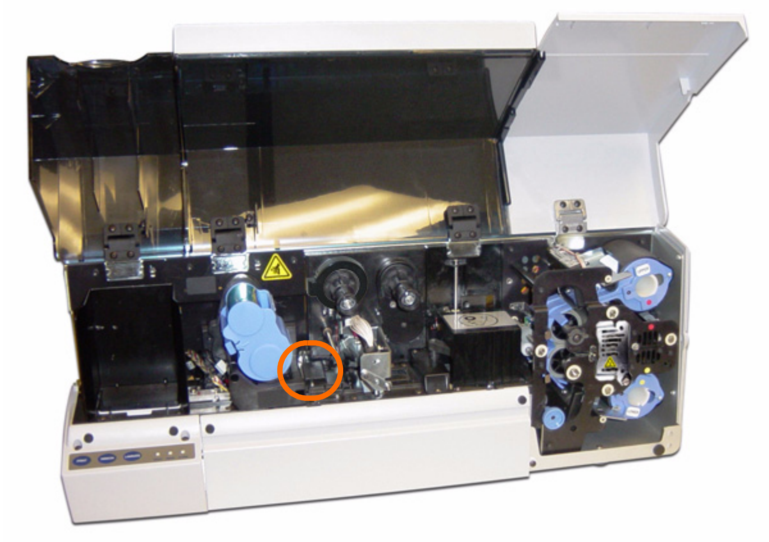
**Step 7.** Remove the Color Sensor Assembly.



**Note •** When replacing the Color Sensor Assembly, ensure the round tab is inserted in the hole before tightening.

# 5.25 Contact Smart Card Assembly

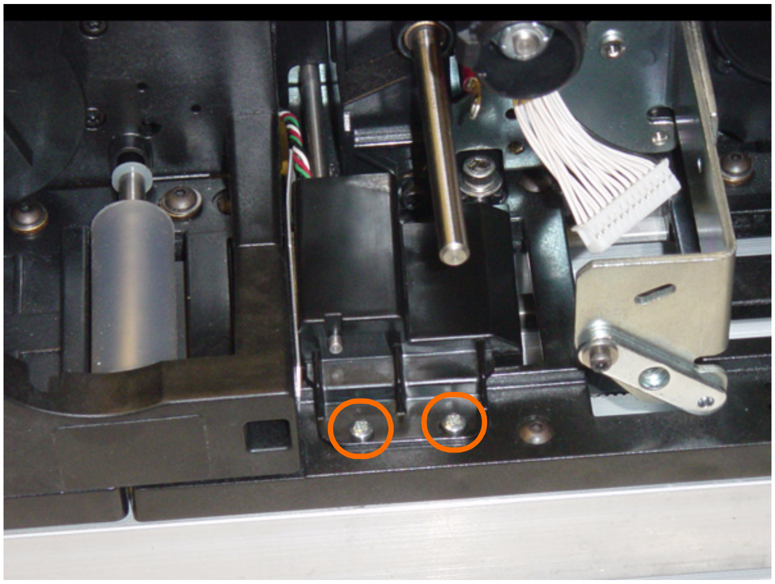
**Step 1.** Locate the Contact Smart Card Assembly.



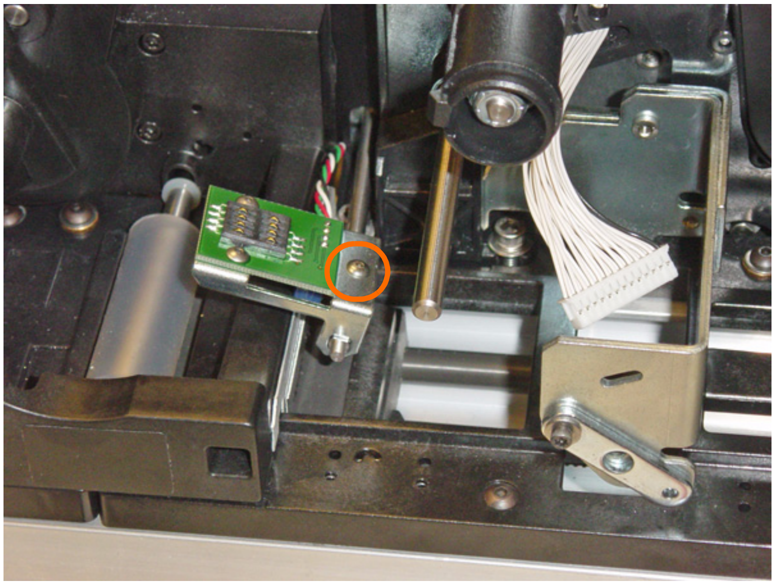
**Step 2.** If not already done, remove the Rear Cover (see Section 5.3) and the Main PCBA (see Section 5.5).

**Step 3.** Remove the Contact Smart Card PCBA.

**a.** With a Phillips #0 screwdriver, remove the two screws holding the Contact Smart Card Cover in place.

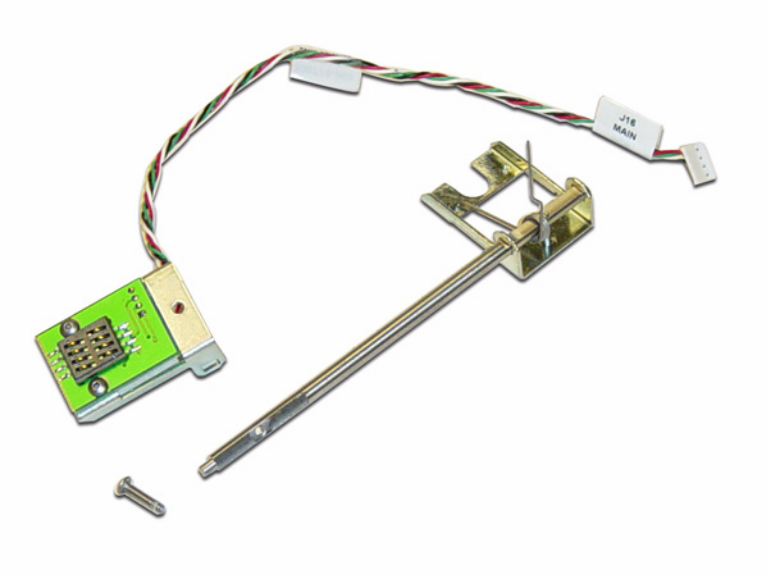


**b.** With a 2mm hex driver, remove the screw holding the Contact Smart Card PCBA to the shaft.



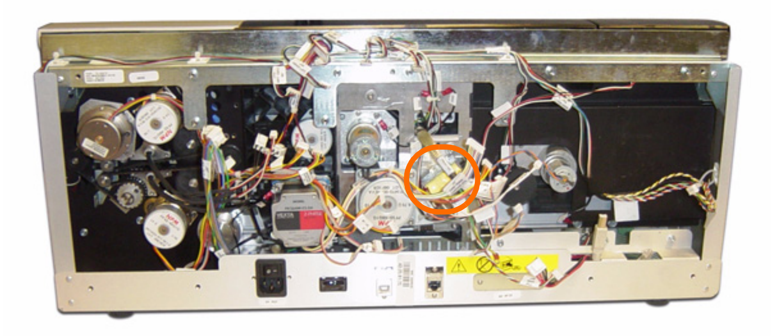
**c.** If not already disconnected, remove the connector from J16 on the Main PCBA.

**d.** Remove the Contact Smart Card PCBA and shaft.



**Step 4.** Remove the Contact Smart Card Solenoid.

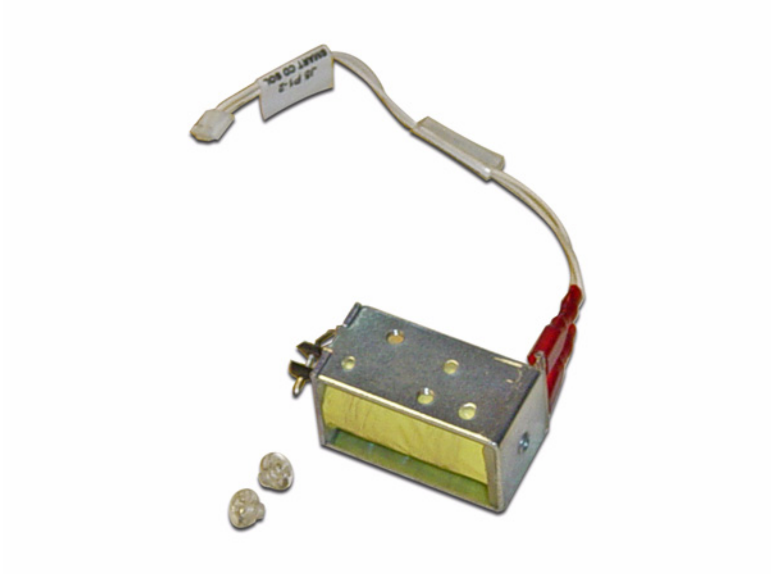
**a.** Locate the Contact Smart Card Solenoid.



**b.** With a Phillips #2 screwdriver, remove the two screws holding the solenoid in the bracket.

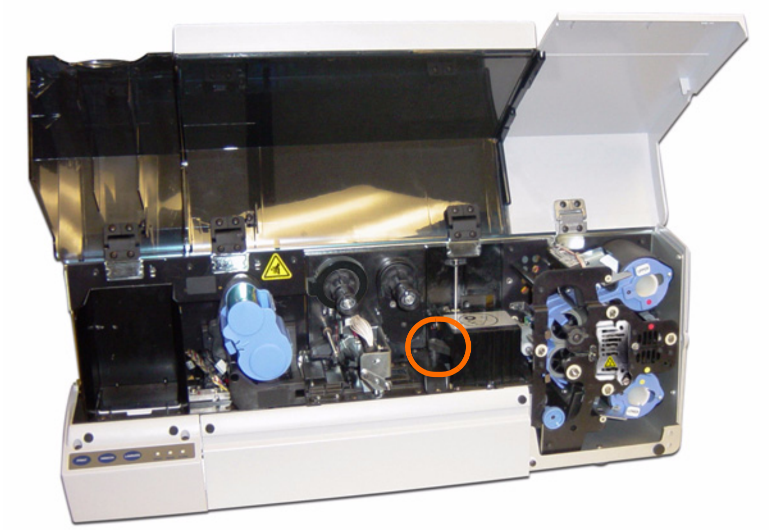
**c.** If not already disconnected, remove the connector from J16 on the Main PCBA.

**d.** Remove the Contact Smart Card Solenoid.



# 5.26 Eject Arm

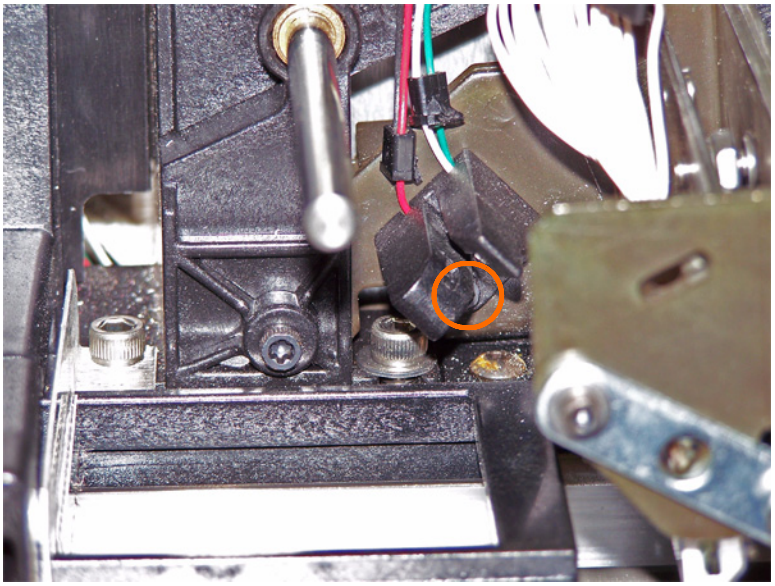
**Step 1.** Locate the Eject Arm.



**Step 2.** If not already done, remove the Rear Cover (see Section 5.3) and the Main PCBA (see Section 5.5).

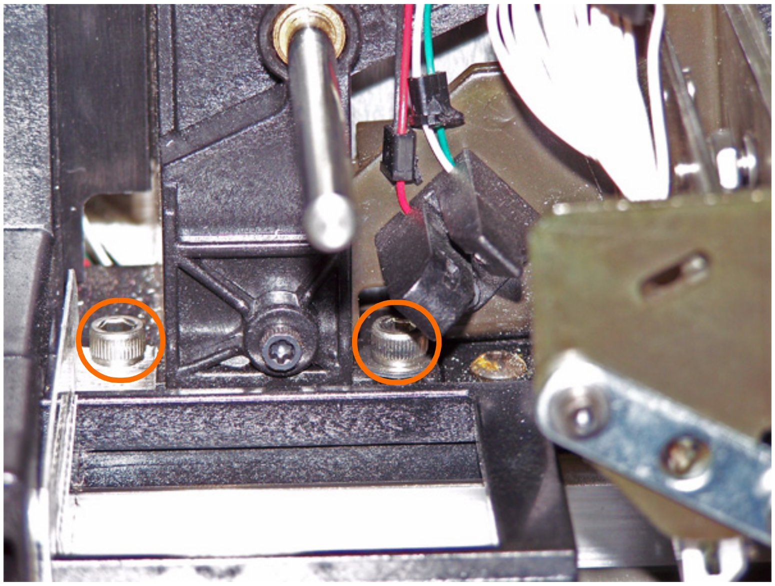
**Step 3.** If the Contact Smart Card Option is installed, remove the Contact Smart Card PCBA (see Section 5.25).

**Step 4.** With a TORX T10- driver, remove the screw holding the Color Sensor in place.



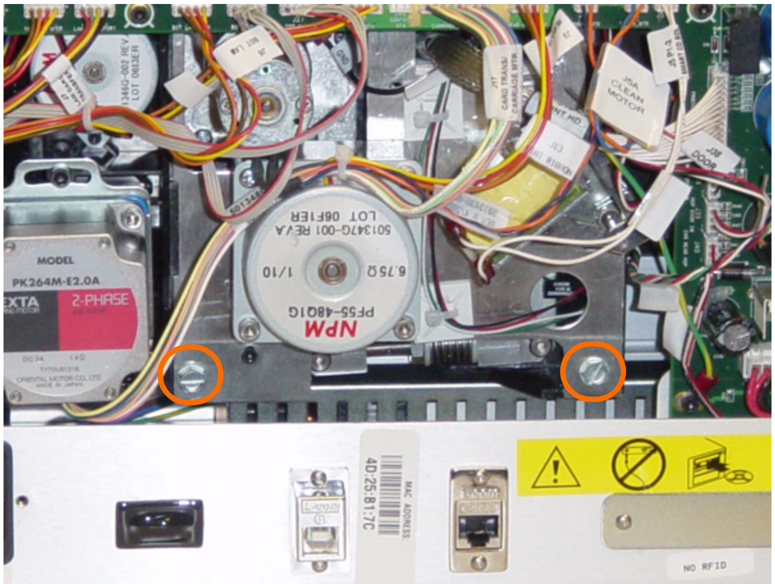
**Step 5.** Move the Color Sensor out of the way.

**Step 6.** With a 5/32 ball-end hex driver, *loosen* the two screws shown below. This will allow the backplate to move.



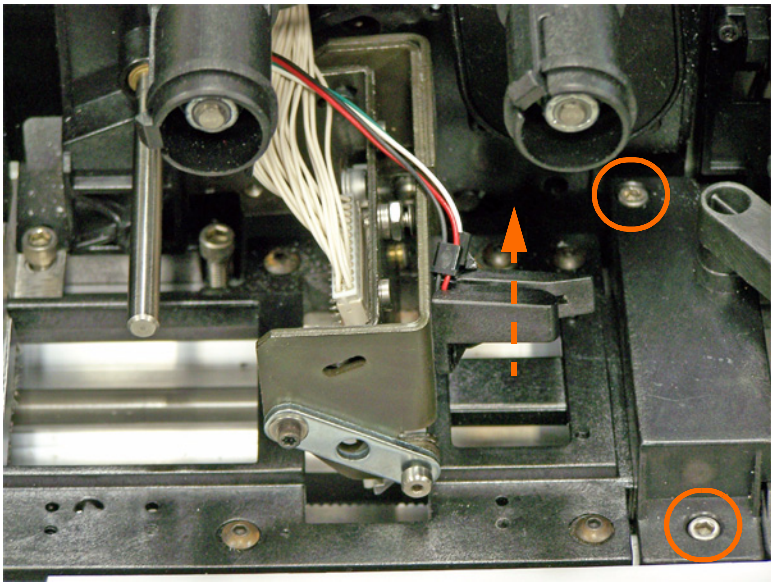
**Step 7.** Turn the printer around (view from back).

**Step 8.** With a flat-blade screwdriver, remove the two screws shown below. This will allow the backplate to move.



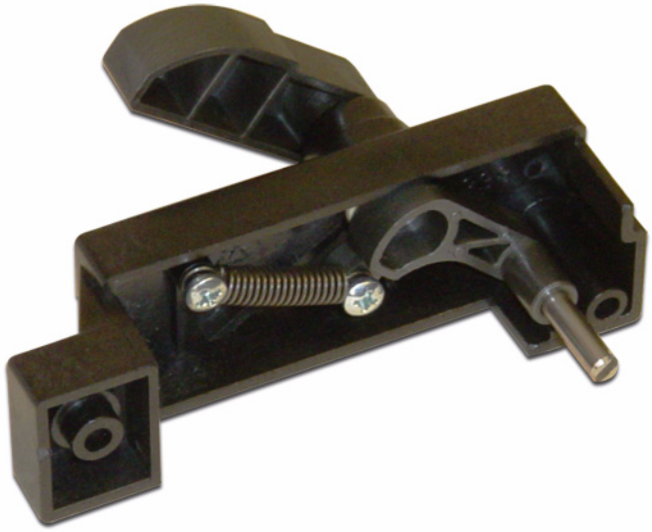
**Step 9.** Turn the printer around (view from front).

**Step 10.** Push and hold the backplate far enough to the rear of the printer to access the screw at the back of the Eject Arm.



**Step 11.** With a 9/64 hex driver, remove the screws at the back and front of the Eject Arm.

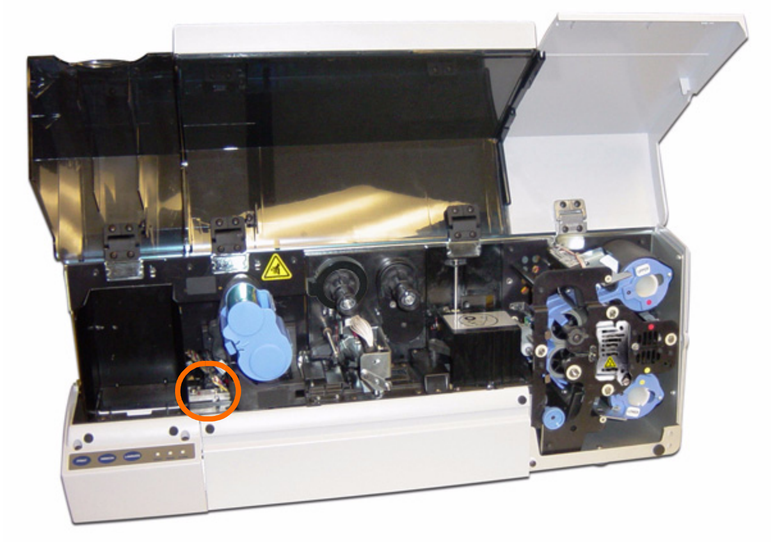
**Step 12.** Remove the Eject Arm.



# 5.27 Magnetic Encoder

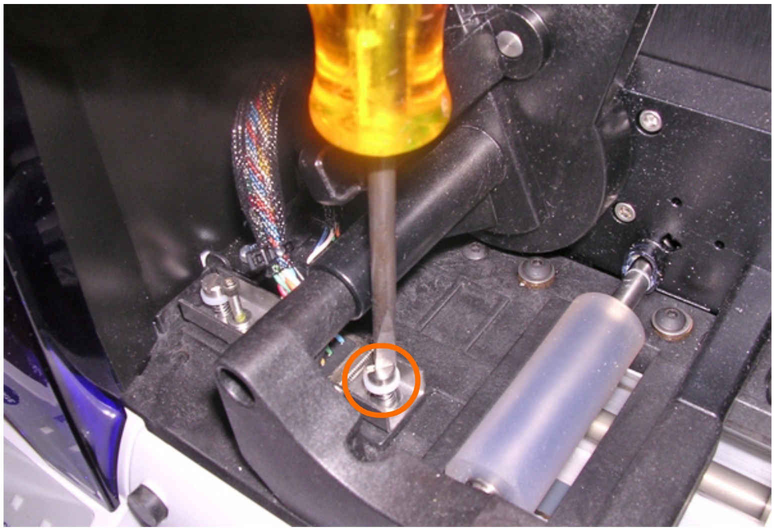
## 5.27.1 Removal

**Step 1.** Locate the Magnetic Encoder.



**Step 2.** If not already done, remove the Rear Cover (see Section 5.3) and the Main PCBA (see Section 5.5).

**Step 3.** With a 5/64 hex driver, remove the shoulder screw, nylon washer, compression spring, and flat washer from the right side of the Magnetic Encoder.



**Step 4.** With a 5/64 hex driver, remove the shoulder screw, nylon washer, and compression spring from the left side of the Magnetic Encoder. Note that there is no flat washer on the left side.

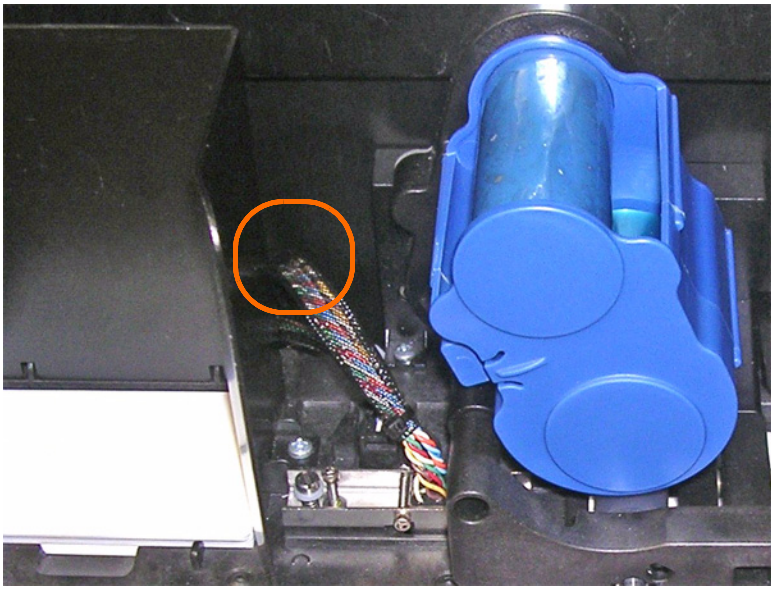
**Step 5.** Turn the printer around (view from back).

**Step 6.** With a flat-blade screwdriver, disconnect the ground wire attached to the Frame.

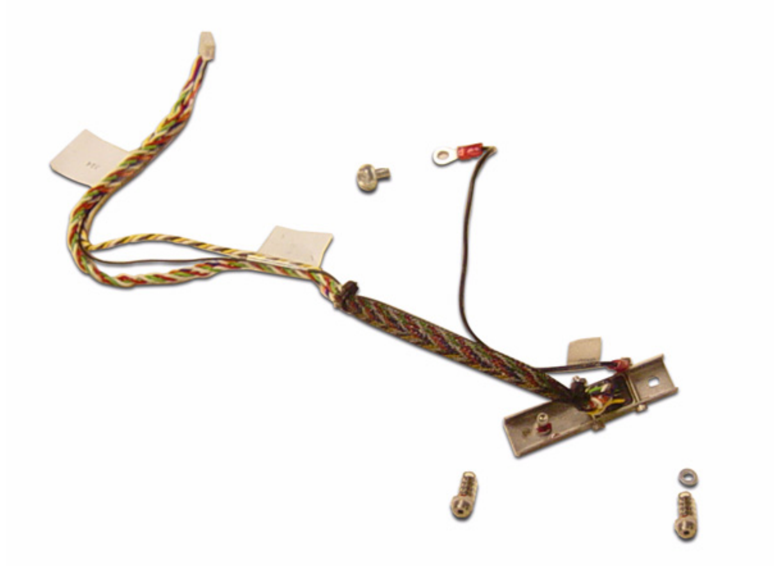
**Step 7.** If not already disconnected, remove the Magnetic Encoder Connector from J14 on the Main PCBA.

**Step 8.** Turn the printer around (view from front).

**Step 9.** Carefully pull the cable and connector through the opening behind the Hopper.



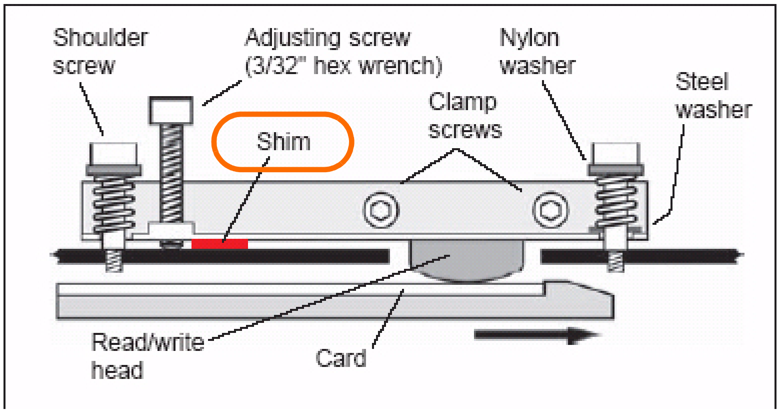
**Step 10.** Remove the Magnetic Encoder.



## 5.27.2 Replacement

**Step 1.** Set the replacement Magnetic Encoder in place.

**Important** • Use the 30-thousandths shim while installing the shoulder screws (and associated hardware), then remove it once the screws are tightened.


Shoulder screw
Adjusting screw (3/32" hex wrench)
Nylon washer
Steel washer
Clamp screws
Shim
Read/write head
Card

**Step 2.** Install the shoulder screws, nylon washers, compression springs, and flat washer. Note that there is no flat washer on the left side.

**Step 3.** Remove the shim.

**Step 4.** Carefully pull the ground wire and cable & connector through the opening behind the Hopper.

**Step 5.** Connect the Magnetic Encoder Connector to J14 on the Main PCBA.

**Step 6.** Connect the ground wire to the Frame.

## 5.27.3 Adjustment

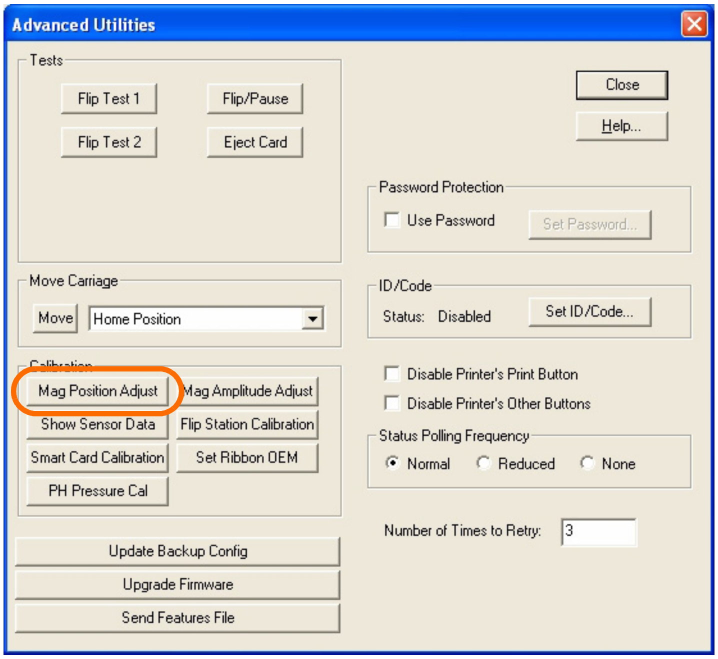
**Step 1.** After replacing the Magnetic Encoder, go into the **Printer Driver;** and perform the Magnetic Encoder Position Adjustment.

**a.** Select *Start* > *Printers and Faxes,* right click the *Zebra Card Printer,* and select *Properties* from the pop-up menu.

**b.** From the Card Printer Properties screen, select *Device Settings* > *Control* > *Advanced Utilities.*

**c.** Load a few magnetic stripe cards.

**d.** Click the Mag Position Adjust button.


Advanced Utilities
Tests
Flip Test 1
Flip/Pause
Flip Test 2
Eject Card
Close
Help...
Password Protection
Use Password
Set Password...
Move Carriage
Move
ID/Code
Set ID/Code...
Calibration
Mag Position Adjust
Mag Amplitude Adjust
Show Sensor Data
Flip Station Calibration
Smart Card Calibration
Set Ribbon OEM
PH Pressure Cal
Disable Printer's Print Button
Disable Printer's Other Buttons
Status Polling Frequency
Update Backup Config
Upgrade Firmware
Send Features File

☐ Use Password

Move Carriage: Home Position

Status: Disabled

☐ Disable Printer's Print Button

☐ Disable Printer's Other Buttons

Status Polling Frequency: ● Normal ○ Reduced ○ None

Number of Times to Retry: 3

**e.** Observe the printer load, encode, and eject the card. Note that this is a one-time setup when the starting position is stored in the firmware. It is not necessary repeat this step unless the Magnetic Encoder is *mechanically* adjusted.

**Important •** Do not perform Step 2 if the encoder successfully writes to the magnetic stripe and all three tracks on the stripe read properly.

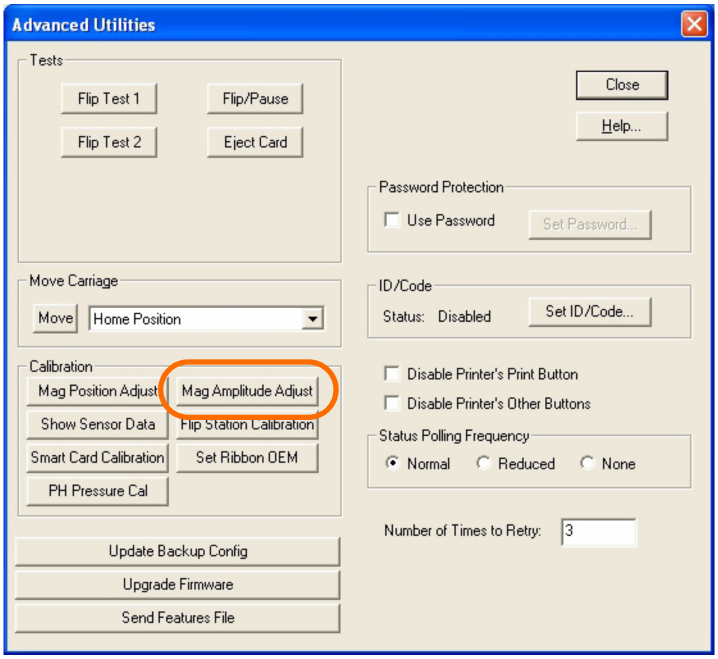
**Step 2.** If there is a magnetic encoder error, go into the **Printer Driver;** and perform the Magnetic Encoder Amplitude Adjustment.

**a.** Select *Start > Printers and Faxes,* right click the *Zebra Card Printer,* and select *Properties* from the pop-up menu.

**b.** From the Card Printer Properties screen, select *Device Settings > Control > Advanced Utilities.*

**c.** Load a few magnetic stripe cards.

**d.** Click the Mag Amplitude Adjust button.


Advanced Utilities
Tests
Flip Test 1
Flip/Pause
Flip Test 2
Eject Card
Close
Help...
Password Protection
Set Password...
Move Carriage
Move
ID/Code
Set ID/Code...
Calibration
Mag Position Adjust
Mag Amplitude Adjust
Show Sensor Data
Flip Station Calibration
Smart Card Calibration
Set Ribbon OEM
PH Pressure Cal
Update Backup Config
Upgrade Firmware
Send Features File

☐ Use Password

Home Position

Status: Disabled

☐ Disable Printer's Print Button

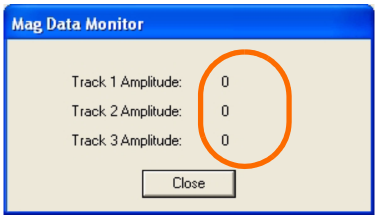
☐ Disable Printer's Other Buttons

Status Polling Frequency: ● Normal ○ Reduced ○ None

Number of Times to Retry: 3

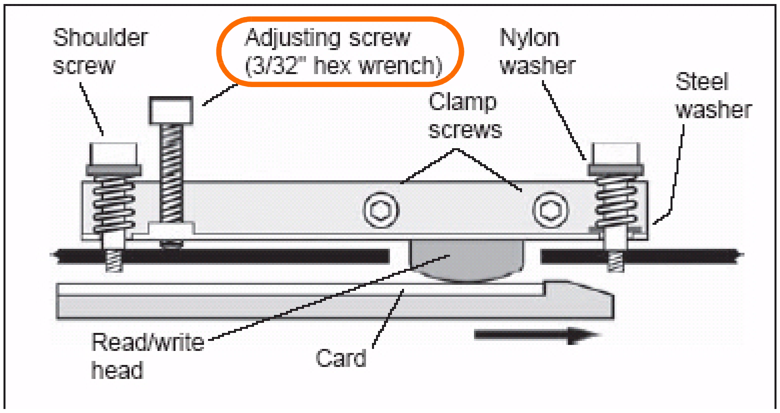
**e.** Observe the printer load a card and run the card back and forth under the Magnetic Encoder.

**f.** Observe the Mag Data Monitor window which shows the amplitude values of all three tracks. All three tracks should be close in value and be greater than 100.


Mag Data Monitor
Close

Track 1 Amplitude: 0
Track 2 Amplitude: 0
Track 3 Amplitude: 0

**g.** With a 3/32 hex wrench, adjust the amplitude by turning the adjusting screw 1/4 turn clockwise.


Shoulder screw
Adjusting screw (3/32" hex wrench)
Nylon washer
Steel washer
Clamp screws
Read/write head
Card

**h.** Continue turning the adjusting screw clockwise 1/4 turn until any or all amplitudes drop off sharply; then back off the adjustment 1/2 turn.

**i.** All three tracks should be close in value and be greater than 100.

**j.** Encode and read another magnetic stripe card.

**k.** Repeat these adjustment steps if necessary.

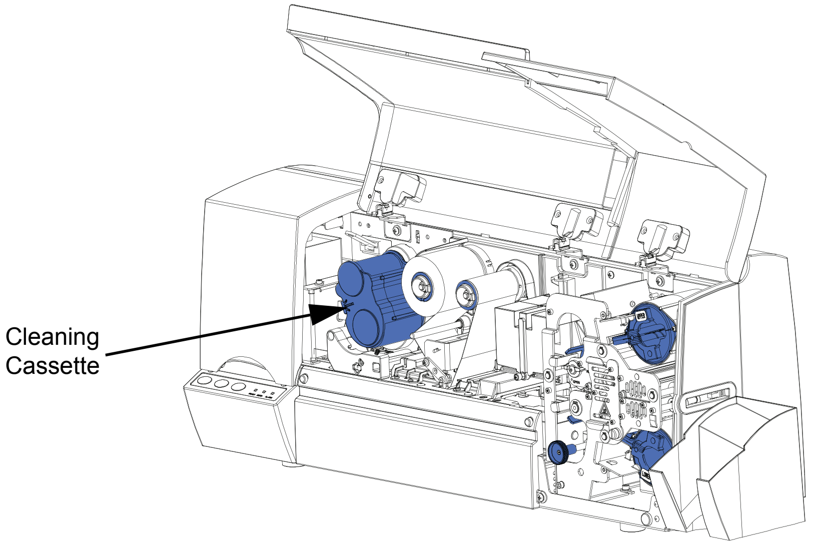
# 6

# Preventive Maintenance

There is almost no preventive maintenance to be performed. Dust and debris should be vacuumed out every 12 months, or more frequently in adverse environments.

## 6.1 Card Cleaning System

Your Printer includes a simple cleaning system using a Cleaning Cassette.



Before being printed, each surface of the card is cleaned by a soft tacky roller that is itself cleaned periodically by adhesive tape in the Cleaning Cassette. By default, the roller is cleaned every 10 cards. The printer driver software allows the card count to be modified.

By cleaning the roller every 10 cards, the Cleaning Cassette contains sufficient tape for 3,000 cards.

## 6.2 Print Head Cleaning

The card cleaning system using the Cleaning Cassette will normally do an adequate job of cleaning the cards. However, a separate Printhead cleaning, using swabs, can remove more stubborn deposits when print anomalies persist.

---

**Caution • Only use foam-tipped swabs**. Never use a sharp object to scrape deposits from the print head. Permanent damage to the print head will result.

---

**Step 1.** Place the printer power switch in the ON ( | ) position.

**Step 2.** Open the printer Main Cover. The Printhead will raise for easy access.

**Step 3.** Remove the Ribbon.

**Step 4.** Clean the Printhead by moving an alcohol-moistened swab tip side-to-side across the Printhead elements. Only use moderate force.

**Step 5.** Allow two to three minutes for the Printhead to dry.

**Step 6.** Re-install the Ribbon.

**Step 7.** Close the printer Main Cover.

To reorder swabs, reference the Printer Media List.

# 6.3 Platen Care and Cleaning

**Important** • Regular cleaning of the Platen helps maintain performance.

The Platen plays an important part in the printing process, providing a rigid supporting surface for the card as it passes under the print head.

Because ***flatness*** is important, the Platen is surface ground to close tolerances. Any irregularities in the surface due to abrasion, dings, or even seemingly unimportant particles of debris can noticeably degrade printing performance.

**Step 1.** Remove the Platen.

**Step 2.** Clean its surface with soapy water.

**Step 3.** Dry the Platen with a lint-free cloth, then return it to the truck.

**Step 4.** Hold the Platen's left end slightly downhill until it drops into place, taking care not to dislodge the spring.

# APPENDIX A

# Part Numbers

The Part Number of a particular Printer is shown on a label affixed to the bottom of the printer; that Part Number identifies the specific configuration for that printer.

This chart shows the configurations that are available.

| PART NUMBER | | | | | DESCRIPTION |
|---|---|---|---|---|---|
| | | | | | **Base Printer** |
| P 6 3 0 *i* | - | _ _ _ _ _ _ | - | _ _ _ | P630i Dual-Sided Color Card Printer with Single Linerless Laminator |
| P 6 3 0 *i*S | - | _ _ _ _ _ _ | - | _ _ _ | P630iS Dual-Sided Color Card Printer with Single Linerless Laminator and Advanced ID Key Security Feature |
| | | | | | **Base Printer** |
| P 6 4 0 *i* | - | _ _ _ _ _ _ | - | _ _ _ | P640i Dual-Sided Color Card Printer with Dual Linerless Laminator |
| P 6 4 0 *i*S | - | _ _ _ _ _ _ | - | _ _ _ | P640iS Dual-Sided Color Card Printer with Dual Linerless Laminator and Advanced ID Key Security Feature |
| | | | | | **Smart Card Options** |
| _ _ _ _ _ _ | - | 0 _ _ _ _ _ | - | _ _ _ | None |
| _ _ _ _ _ _ | - | B _ _ _ _ _ | - | _ _ _ | Contact Encoder |
| _ _ _ _ _ _ | - | D _ _ _ _ _ | - | _ _ _ | Contact Encoder & MIFARE contactless |
| _ _ _ _ _ _ | - | E _ _ _ _ _ | - | _ _ _ | Contact Station |
| _ _ _ _ _ _ | - | H _ _ _ _ _ | - | _ _ _ | MIFARE contactless |
| | | | | | **Magnetic Encoder** |
| _ _ _ _ _ _ | - | _ 0 0 _ _ | - | _ _ _ | None |
| _ _ _ _ _ _ | - | _ M 3 _ _ | - | _ _ _ | Stripe Up, HiCo |
| | | | | | **Barcode Reader** |
| _ _ _ _ _ _ | - | _ 0 0 _ _ | - | _ _ _ | None |
| _ _ _ _ _ _ | - | _ B 1 _ _ | - | _ _ _ | Linear |
| | | | | | **Memory Expansion** |
| _ _ _ _ _ _ | - | _ _ _ 0 _ | - | _ _ _ | None |
| | | | | | **Interface** |
| _ _ _ _ _ _ | - | _ _ _ _ _ A | - | _ _ _ | USB Standard Configuration |
| _ _ _ _ _ _ | - | _ _ _ _ _ C | - | _ _ _ | USB and Built-In Ethernet 10/100T |
| | | | | | **Power Cords** |
| _ _ _ _ _ _ | - | _ _ _ _ _ _ | - | I _ _ | 102V AC U.S. and 230V AC Europe |
| _ _ _ _ _ _ | - | _ _ _ _ _ _ | - | U _ _ | U. K. and Australia |
| | | | | | **Windows Drivers and User Documentation / Training** |
| _ _ _ _ _ _ | - | _ _ _ _ _ _ | - | _ D _ | Windows Driver CD (Win 2K and XP) and User Documentation & Training CD |
| | | | | | **RoHS** |
| _ _ _ _ _ _ | - | _ _ _ _ _ _ | - | _ _ G | Compliant |

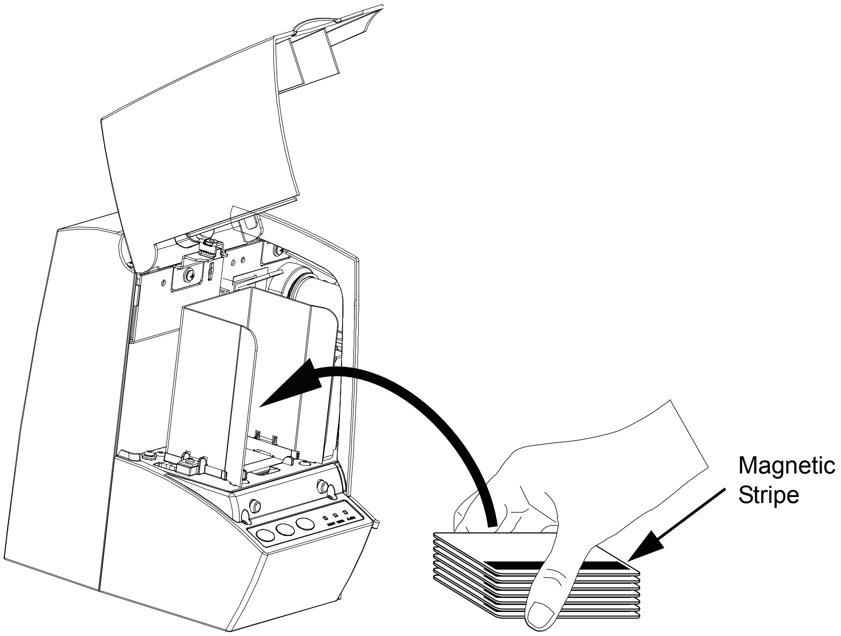
# Appendix B

# Magnetic Encoder

## Media Loading Orientation

**Caution** • ONLY USE cards that comply with ISO 7810 & 7811 standards for magnetic stripe cards. The magnetic stripe must be flush to the surface of the card to work properly. Never use cards which have taped-on magnetic stripes.

When loading cards with magnetic stripes into the card feeder, please ensure that the magnetic stripe is face up, facing the front of the printer.



# Magnetic Card Stripe Encoding

This section contains information on the additional operations of the P630*i* or P640*i* Printer with Magnetic Card Stripe Encoder.The magnetic encoder uses high coercivity.

## ISO Standard Encoding

| Track # | Field Separator | Track Density | Valid Characters | # of characters |
|---|---|---|---|---|
| 1 | ^ | 210 BPI* | Alphanumeric (ASCII 20~95†) | 79‡ |
| 2 | = | 75 BPI* | Numeric (ASCII 48~62) | 40‡ |
| 3 | = | 210 BPI* | Numeric (ASCII 48~62) | 107‡ |

* Bits per inch

† Except the "?" character

‡ Including three characters: Start, Stop, and LRC. Note that these three characters are automatically managed by the magnetic encoder according to the ISO Standard Norms.

**Note** • Refer to the Card Printer Programmer's Manual for complete programming information.

## AAMVA Standard Encoding

| Track # | Field Separator | Track Density | Valid Characters | # of Characters |
|---|---|---|---|---|
| 1 | % | 210 BPI* | Alphanumeric | 82‡ |
| 2 | : | 75 BPI* | Numeric | 40‡ |
| 3 | % | 210 BPI* | Alphanumeric | 82‡ |

* Bits per inch

‡ Including three characters: Start, Stop, and LRC. Note that these three characters are automatically managed by the magnetic encoder according to the ISO Standard Norms.

# Appendix C

# Smart Card Contactless Encoder

## Introduction

Smart cards can have a built-in microprocessor and/or memory chip. The printer may be equipped with an optional contactless station for programming Smart Cards. Smart card contactless encoders utilize a short-range radio signal. Use of the encoder is entirely under control of the third-party application program -- no operator action is required. All other printer operations remain the same as the standard model.

This section contains information on the additional operations of a P630*i* or P640*i* Printer equipped with the optional Smart Card Contactless Station.

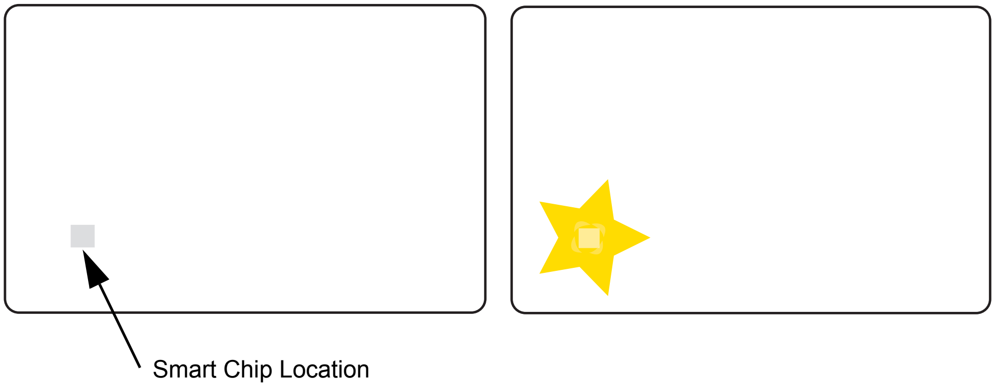
## Media Loading Orientation

For contactless smart-cards, orientation is not a consideration (unless the card will be printed on; see below).

# Printing Contactless Smart Cards

When designing material to be printed on Contactless Smart Cards, be sure the printing will not be on the smart chip area (i.e., the printing on **either side of the card** must not be on top of or underneath the smart chip area).

By looking at an un-printed card very carefully, it is possible to see the chip location (as in the figure on the left below). If you print in that area, results will be unsatisfactory (in the figure on the right, the “star” should have been a single solid color).



# Appendix D

# Smart Card Contact Station

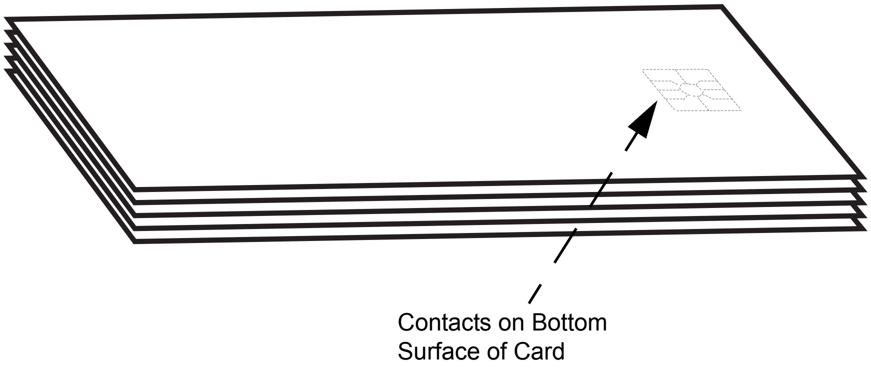
## Introduction

Smart Cards have a built-in microcomputer and/or memory chip, which is used to store fingerprints, voice recognition patterns, medical records, or other types of data. The printer may be equipped with an optional contact station for programming Smart Cards (ISO 7816). This printer model responds to commands that position the card at the contact station, where the printer connects to the contacts on the Smart Card. All other printer operations remain the same as the standard model.

This section contains information on the additional operations of a P630*i* or P640*i* Printer equipped with the optional Smart Card Contact Station.

## Media Loading Orientation

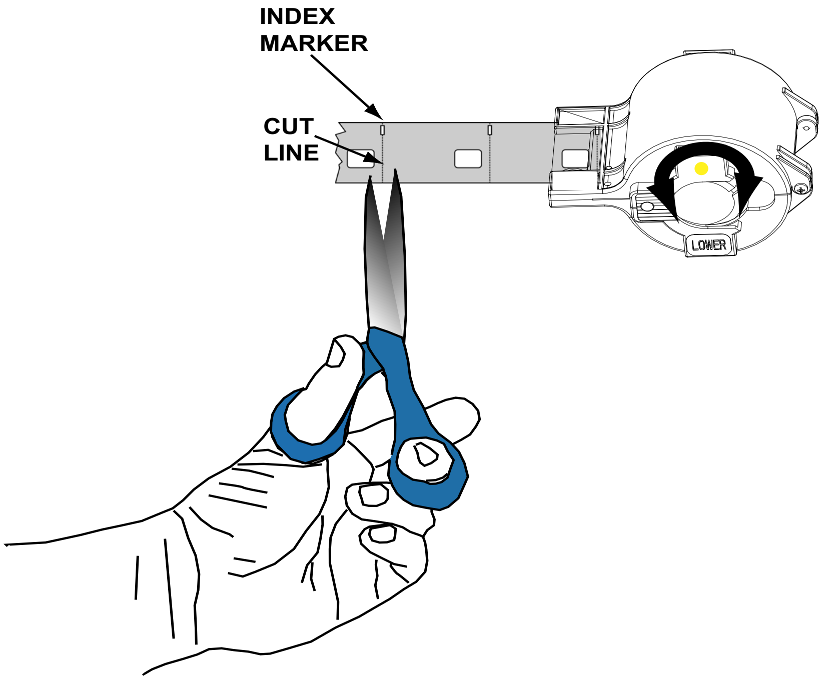
Orient the cards with the gold-plated Smart Card contacts at the bottom surface of the card and facing to the right.



# Laminating Contact Smart Cards

The laminating patch on the top surface of a smart card has a rectangular aperture to expose the card's electrical contacts. In all other respects the laminating process for smart cards is the same as for ordinary cards.

The special laminate for the top cassette is punched with a repeated pattern. Loading procedure for smart card laminate is exactly the same as for standard laminate as shown in Chapter 2.



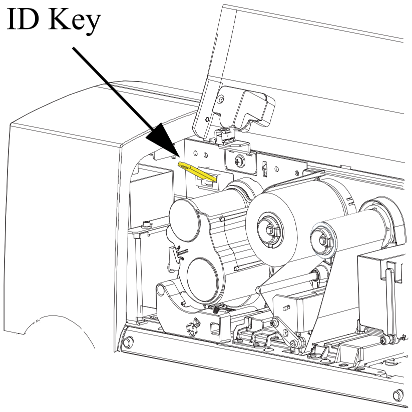
The smaller hole is an index marker that tells the printer where to cut the laminate, ***exactly*** splitting the index hole (the printer driver allows adjustment of the cut location). After loading the Smart Card laminate in the upper cassette, trim the laminate along the cut line as shown.

**Note •** When using smart card or registered laminates, the laminate length value in the driver may need to be adjusted; see Laminate Station Adjustment on page 64.

# Appendix E

# Printer Security

## ID/Key



The optional ID/Key is a physical security key that is programmed for each specific P630*i* or P640*i* printer. It is intended to prevent unauthorized use of that printer.

The ID/Key has a non-alterable memory containing a unique 64-bit serial number that is compared prior to each print job with a serial number stored in the printer's Non-Volatile Random Access Memory (NVRAM). If the serial numbers fail to match, or if no ID/Key is detected, the printer is disabled. The ID/Key is carried in a 2" x ¾" plastic fob that plugs into a receptacle to the right of the card hopper.

Typically, at the end of each work session the ID/Key is removed from the printer and stored in a secure location such as a key safe.

### Replacing a Lost ID/Key

---

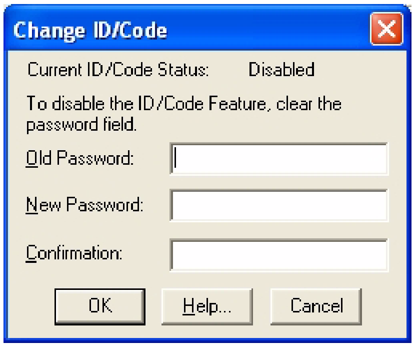
**Important •** If the ID/Key is removed during a card printing session, the printer will cease to operate after the current batch of cards is printed.

---

The recovery procedure requires a special computer file obtainable only from Zebra product support. This file is downloaded to the printer, following which the replacement ID/Key is inserted. The printer is then power cycled, off then on, at which point the key's serial number is recorded in NVRAM.

# Printer Parameters in the Driver

## ID/Code



Current ID/Code Status: Disabled

To disable the ID/Code Feature, clear the password field.

The ID/Code, or password, synchronizes the driver with the printer. This prevents use of the printer with a PC not having the same ID/Code.

The initial ID/Code is assigned at the factory during manufacture. The factory assigned code is located on a sticker on the underside of the ID/Key.

To change this code, select *Start* > *Printers (or Printers and Faxes)*. Right click *Zebra P630i*, or *Zebra P640i*, then select *Properties* > *Device Settings* > *Control* > *Advanced Utilities.*

In the Change ID/Code window, enter the old password from the underside of the ID/Key in the Old Password field. Enter a new password in the New Password field, and enter the same password in the Confirmation field.

To disable the ID/Code function, leave the New Password and Confirmation fields blank. When completed, click the OK button

## Update Backup Config

Most of the parameters affecting operation of the printer are set up using the printer driver, and are then saved in the printer's flash memory as the current configuration. The original factory configuration also resides in a separate backup memory, allowing you to recover the as-shipped settings.

The **Update Backup Config** command instructs the printer to replace the factory configuration with the current configuration, but do not do this casually. Once the current configuration replaces the factory configuration, you can no longer return the printer to the factory settings.

## Restoring the Backup Configuration Settings

Revert to **Backup Config** as follows:

**Step 1.** Turn power OFF.

**Step 2.** Remove the color ribbon.

**Step 3.** Press and hold the PRINT, RIBBON, and LAMINATE buttons at the same time as you switch on the power.

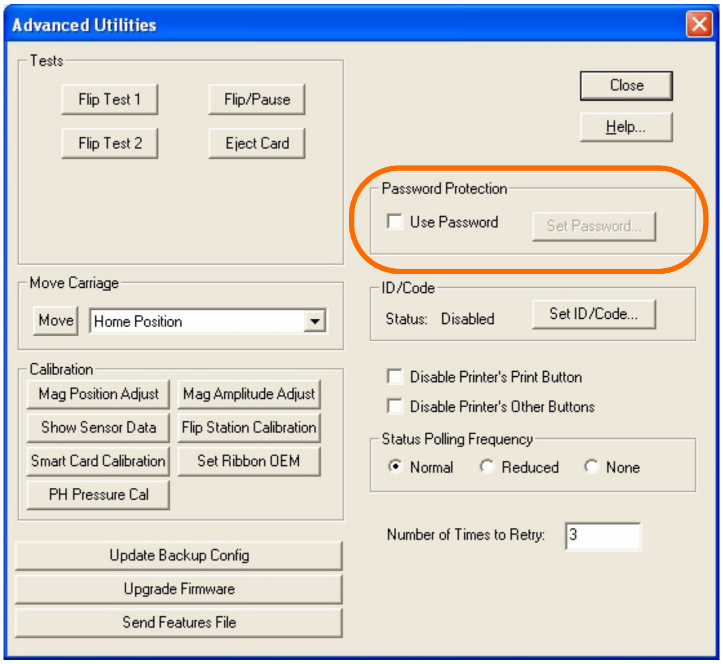
**Step 4.** Release the three buttons when you see activity in the printer.

## Password Protection

Password protection is not the same as ID/Code. Password protection blocks access to various low level printer adjustment screens.

To enable password protection, select *Start > Printers (or Printers and Faxes).* Right click *Zebra P630i*, or *Zebra P640i*, then select *Properties > Device Settings > Control > Advanced Utilities.*

In the Password Protection section, check **Use Password; and** enter a password of your choice.


Advanced Utilities
Tests
Flip Test 1
Flip/Pause
Flip Test 2
Eject Card
Close
Help...
Password Protection
☐ Use Password
Set Password...
Move Carriage
Move
Home Position
ID/Code
Status: Disabled
Set ID/Code...
Calibration
Mag Position Adjust
Mag Amplitude Adjust
Show Sensor Data
Flip Station Calibration
Smart Card Calibration
Set Ribbon OEM
PH Pressure Cal
☐ Disable Printer's Print Button
☐ Disable Printer's Other Buttons
Status Polling Frequency
● Normal ○ Reduced ○ None
Number of Times to Retry: 3
Update Backup Config
Upgrade Firmware
Send Features File

# APPENDIX F

# Printer Pooling

## Setting Up the Printers Individually

• *For illustration, we will establish a pool of three printers* •

**Note** • In the P640i, many of the configuration variables are stored in the printer itself, unlike the typical printer as defined by Microsoft. ***All pooled P640i printers must be set up similarly.***

Step 1. Install and setup the three printers. The printers can have any names of your choosing: here we will name them ***Zebra P640i 1***, ***Zebra P640i 2***, ***Zebra P640i 3***, and we will assume they are attached to ports ***ATLUSB001***, ***ATLUSB002***, ***ATLUSB003***, respectively.

**Step 2.** Before proceeding to pool the printers, test them individually, and be sure they are configured similarly. Specifically, check the following:

- Ribbon panel configuration (ribbon type, and what prints on which side of the card)
- Mag encoding configuration
- Black extraction configuration (if applicable)

# Creating the Pool

Step 1. Go to *Start* > *Printers and Faxes* > *Add a Printer*

**Step 2.** Click Next on the Add Printer Wizard welcome screen.

**Step 3.** Select Local Printer. Make sure that Automatically Detect My Plug and Play Printer is ***unchecked***, then click Next.

**Step 4.** Select Use the following port, and choose the port that the first printer is on. In this illustration, this will be ATLUSB001.

**Step 5.** In the printer list, choose Zebra Technologies as the manufacturer, then choose (for this illustration) Zebra P640i. Click Next.

**Step 6.** On the next screen, choose Keep Existing Driver, then click Next.

**Step 7.** Choose something meaningful for the printer name - ***Pool***, for example. Decide whether or not this is to be the default printer, then click Next.

**Step 8.** Decide whether or not the pool is to be shared, then click Next. ("Shared" means that other networked computers will be able to send jobs to the pool.)

**Step 9.** Choose no test page, then click Next.

**Step 10.** Click Finish. In **Printers and Faxes**, there should now be a printer called **Pool**, or whatever you named it.

**Step 11.** Right click on Pool, then click Properties.

**Step 12.** Click the Ports tab.

**Step 13.** Check the Enable Printer Pooling box.

**Step 14.** In the list of ports, select the other ports that have printers connected to them (remember that only one port was selected on the initial install). For this illustration, check the ATLUSB002 and ATLUSB003 ports, then click OK.

The setup now is three printers (Zebra P640i 1, Zebra P640i 2, and Zebra P640i 3), and one "pool", which is all of them.

# Using the Printer Pool

• *Send print jobs to the pool, not to an individual printer* •

When the first printer has taken as many jobs as it can handle (that being two jobs - one to be printed immediately, the other waiting), the following jobs “spill over” to the second printer, and then to the third printer.

Note that if you are only printing two jobs, they would both go to the first printer. Pooling is a spill-over methodology. It does not balance printer usage.

Once the pool has been set up, maintenance and configuration changes should be done through the menus for each individual printer (e.g., Zebra P640i 1), ***not*** through the pool (which can produce undesirable results).

**Important** • The effect of any maintenance or changes can (and should) be tested by sending print jobs ***separately*** to each printer, not to the pool.

# APPENDIX G

# Spares List

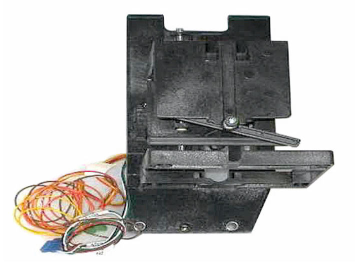
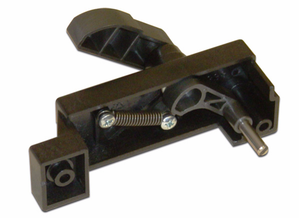
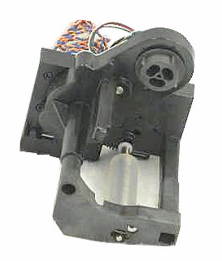
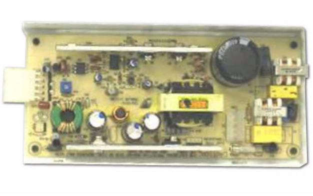
## Introduction

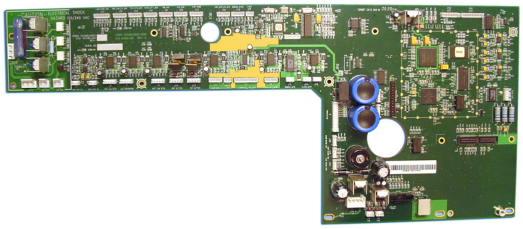
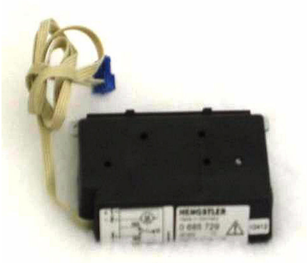
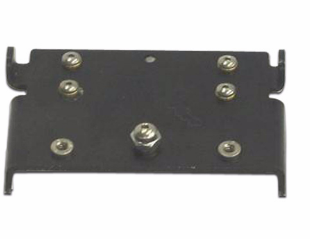
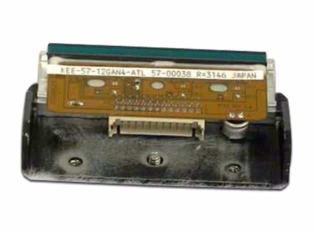
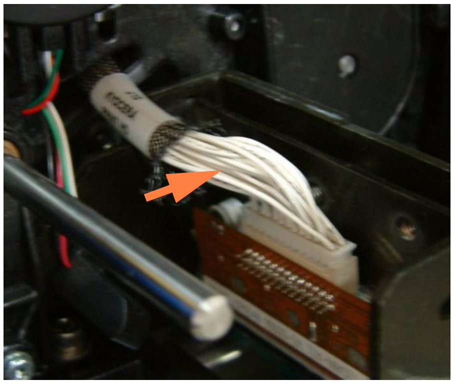
The following tables list the Spare Parts Kits available for the Zebra P630*i* & P640*i* Card Printer. Before ordering, be sure to check the Partner Zone on www.zebracard.com for the latest spare parts kits listing.

The Spares List is arranged in the following categories:

- Assemblies . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 284
- Enclosures . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 287
- Transport. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 290
- Cleaning Station . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 292
- Printing Station. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 293
- Flip Station . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 295
- Laminator . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 297
- Miscellaneous. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 301
- Shipping Carton . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 303

# Assemblies

| Kit # | Description |
|---|---|
|  | |
| 105927G-231 | KIT,ASSY,FLIP STATION COMPLETE |
|  | |
| 105927G-284 | KIT,ASSY,CARD EJECT ARM |
|  | |
| 105927G-285 | KIT,ASSY,CLEAN STATION |
|  | |
| 105927G-239 | KIT,POWER SUPPLY/BRKT |

<table>
<tr><th>Kit #</th><th>Description</th></tr>
<tr><td colspan="2"></td></tr>
<tr><td>105927G-438</td><td>KIT,PCBA,MAIN</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td>105927G-165</td><td>KIT,CTTR,W/24 IN CBL</td></tr>
<tr><td colspan="2"> </td></tr>
<tr><td>105927G-233</td><td>KIT,PH REPLACEMENT</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td>105927G-236</td><td>KIT,C/A,PRINTHEAD</td></tr>
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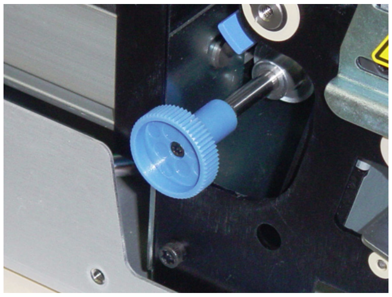
| Kit # | Description |
|---|---|
| | |
| 105927G-443 | KIT, WEIGHT HOPPER |
| | |
| 105927G-240 | KIT,P6XX REPLACEMENT KEY |
| | |
| 105927G-446 | KIT,ASSY,DONGLE,P640 |
|  | |
| 105927G-287 | KIT,KNOB,MANUAL DRIVE |

# Enclosures

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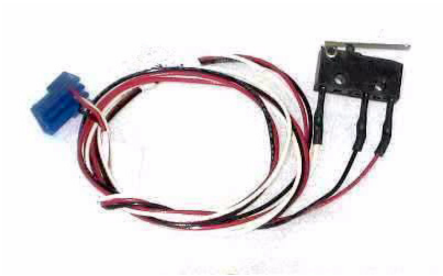
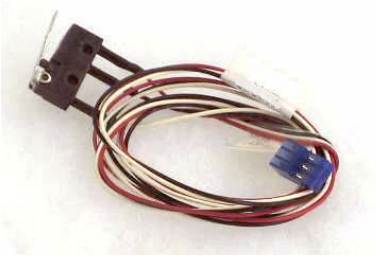
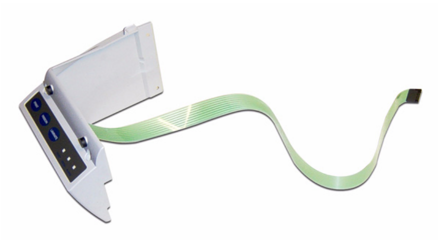
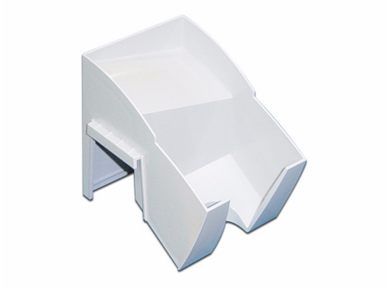
|  | |
| 105927G-273 | KIT,SWITCH,DOOR,OPEN |
|  | |
| 105927G-274 | KIT,SWITCH,HOPPER,OPEN |
|  | |
| 105927G-295 | KIT,FRONT PANEL SWITCH/LED/CBL |
|  | |
| 105927G-280 | KIT,HOPPER,OUTPUT |

| Kit # | Description |
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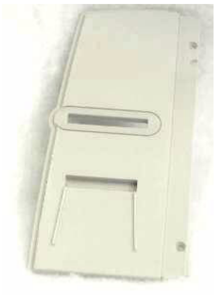
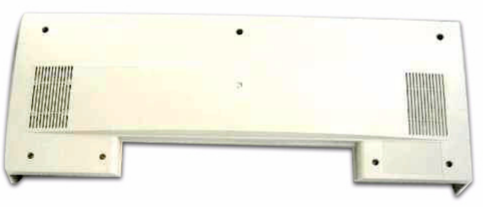
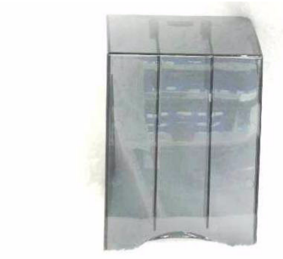
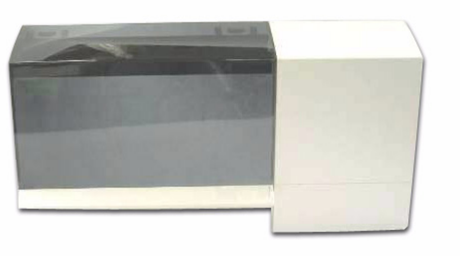
|  | |
| 105927G-294 | KIT,PANEL,END,ENCLOSURE |
|  | |
| 105927G-292 | KIT,COVER,REAR,ENCLOSURE |
|  | |
| 105927G-227 | KIT,DOOR,LOAD,CARD |
|  | |
| 105927G-229 | KIT,ASSY,DOOR,MAIN ACCESS |

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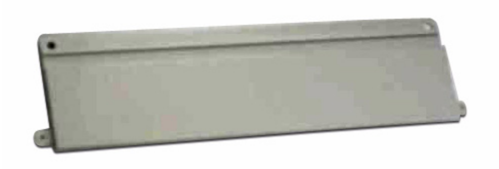
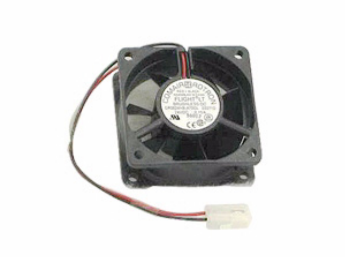
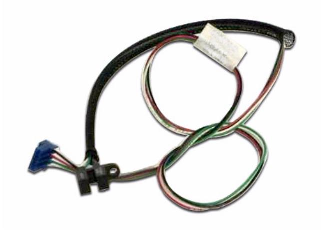
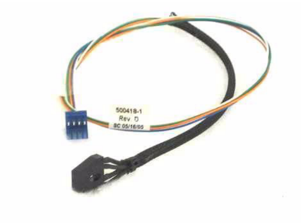
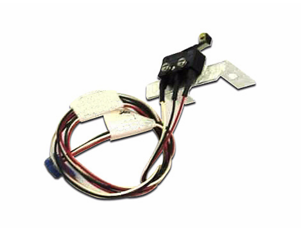
|---|---|
|  | |
| 105927G-293 | KIT,PANEL,FRONT,LOWER |
|  | |
| 105927G-119 | KIT,FAN,COOLING |

# Transport

| Kit # | Description |
|---|---|
| | |
| 105927G-277 | KIT,BELT,TIMNG,MXL,3/8W,150 OT |
| | |
| 105927G-278 | KIT,BELT,TIMING,MXL,3/8W,140T |
| |  |
| 105927G-260 | KIT,C/A,SENSOR,CARRIAGE HOME |
| |  |
| 105927G-258 | KIT,C/A,SENSR,CRD HOPPR EXIT |
| |  |
| 105927G-298 | KIT,SWITCH, NEAR HOPPER |

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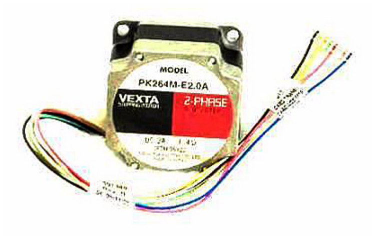
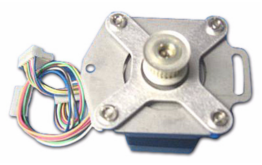
<tr><td colspan="2"> </td></tr>
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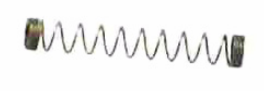
<tr><td colspan="2"></td></tr>
<tr><td>105927G-034</td><td>KIT,SPRNG,PLATEN RETURN</td></tr>
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<tr><td>105927G-104</td><td>KIT,PIN/PLATEN</td></tr>
<tr><td colspan="2"> </td></tr>
<tr><td>105927G-262</td><td>KIT,MAG ENCODER,COMPLETE</td></tr>
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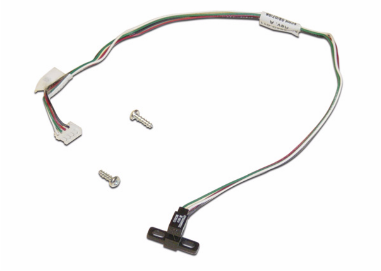
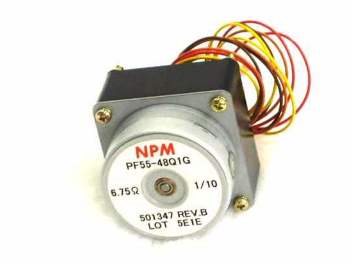
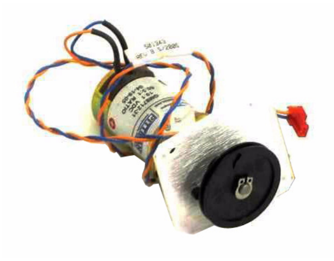
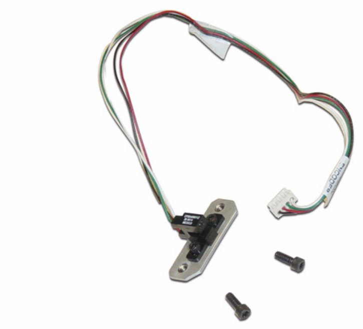
# Cleaning Station

| Kit # | Description |
|---|---|
|  | |
| 105927G-088 | KIT,SENSOR, CLEANING ENCODER |
| | |
| 105927G-230 | KIT,BEARING,SLEEVE W/GROOVE (SET OF 5) |
| | |
| 105927G-221 | KIT,ROLLER,CLEAN,P640I |

# Printing Station

| Kit # | Description |
|---|---|
|  | |
| 105927G-244 | KIT,MOTOR, HEAD LIFT |
|  | |
| 105927G-241 | KIT,MOTOR,PRINT RIBBON,P640I |
| | |
| 105927G-247 | KIT,O-RING,.093 X 7-3/4 83A |
|  | |
| 105927G-238 | KIT,C/A,SENSOR,RBN ENCODER |

| Kit # | Description |
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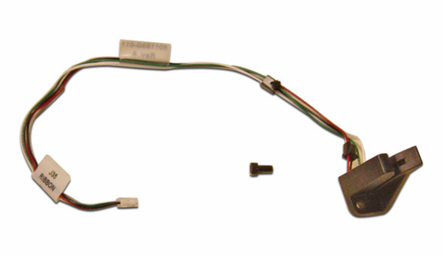
|  | |
| 105927G-348 | KIT,COLOR SENSOR ASSY |
| | |
| 105927G-458 | KIT,ARBOR RBN SPINDLE P6XX |

# Flip Station

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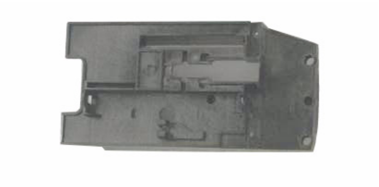
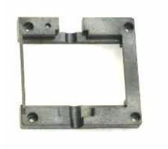
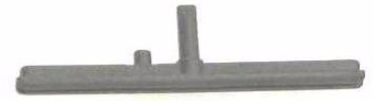
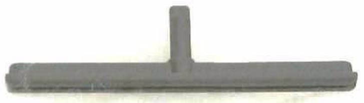
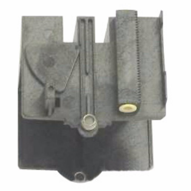
| |  |
| 105927G-303 | KIT,VERTICAL SUPPRT,FLIP STATN |
| |  |
| 105927G-291 | KIT,BEZEL,FLIP STATN |
| |  |
| 105927G-301 | KIT,FLIP GUIDE,REAR,FLIP STATN |
| |  |
| 105927G-302 | KIT,FLIP GUIDE,FRNT,FLIP STATN |
| |  |
| 105927G-257 | KIT,FLIP,CARRIER,P640I |

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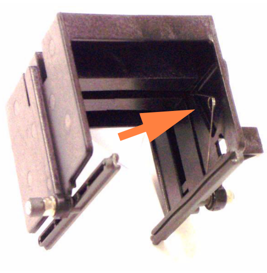
<tr><td colspan="2"></td></tr>
<tr><td>105927G-441</td><td>KIT,SPRING,FLIP GUIDE,P640I   (SET OF 5)</td></tr>
<tr><td colspan="2">

NPM
PF42T-48Q1
12 Ω
501346 REV B
LOT 5EJE

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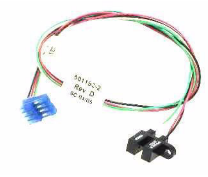
<tr><td>105927G-243</td><td>KIT,MOTOR,FLIP STATION</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td>105927G-266</td><td>KIT,PCBA,SENSR,FLIP STATN</td></tr>
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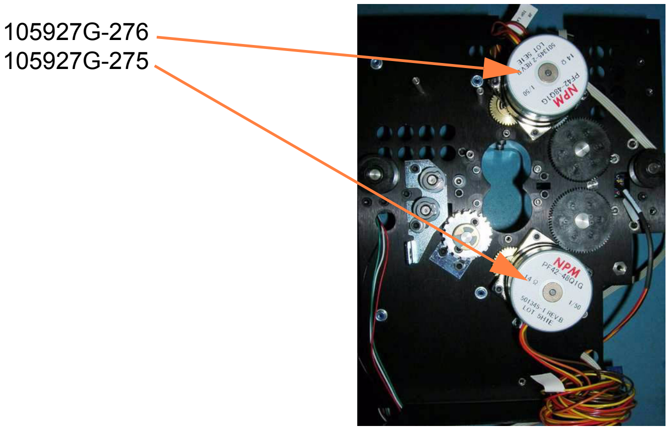
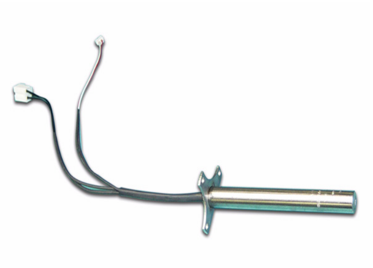
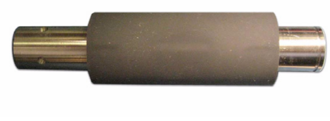
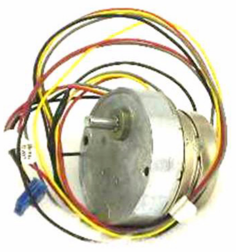
# Laminator

| Kit # | Description |
|---|---|
|  | |
| 105927G-275 | KIT,MOTOR,BOTTOM LAM ROLLER |
| 105927G-276 | KIT,MOTOR,TOP LAM ROLLER |
|  | |
| 105927G-225 | KIT,HEATER,ELEMENT |
|  | |
| 105927G-224 | KIT,COVERING,HEATED ROLLR |
|  | |
| 105927G-246 | KIT,MOTOR,LAM CARD |

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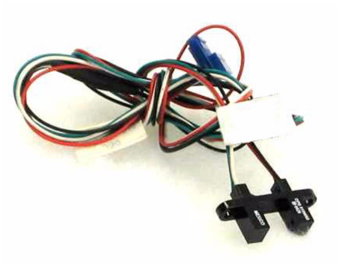
<tr><td colspan="2"></td></tr>
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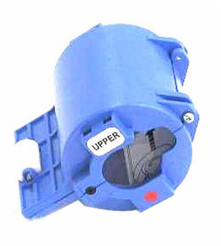
<tr><td colspan="2"> </td></tr>
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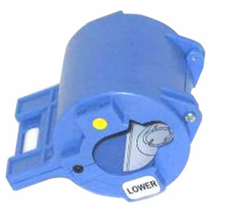
<tr><td colspan="2"> </td></tr>
<tr><td>105927G-265</td><td>KIT,LAM CASSETTE,LOWER</td></tr>
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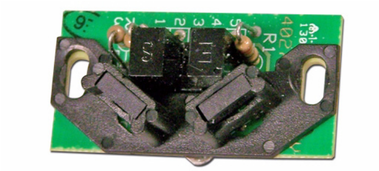
<tr><td>105927G-305</td><td>KIT,BELT,TIMING,LAMINATOR</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td>105927G-120</td><td>KIT,PCBA,SNSR,LAM</td></tr>
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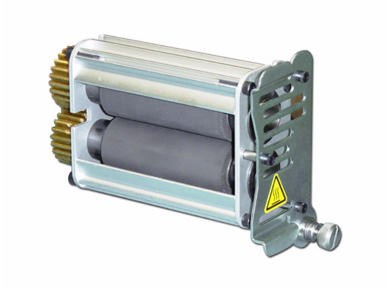
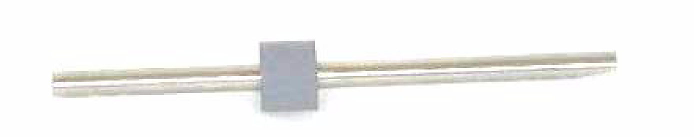
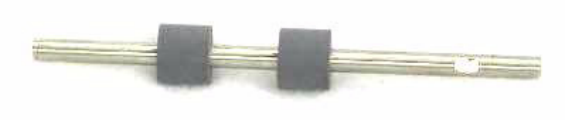
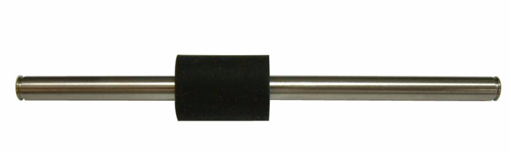
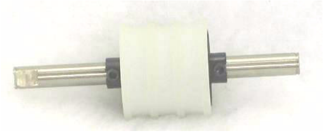
|  | |
| 105927G-235 | KIT,LAM HEATER CARTRIDGE |
|  | |
| 105927G-306 | KIT,NIP SHAFT,SINGLE |
|  | |
| 105927G-307 | KIT,NIP SHAFT,DOUBLE |
|  | |
| 105927G-349 | KIT,NIP SHAFT,LAMINATE |
|  | |
| 105927G-191 | KIT,RLLR TRNSFR,MLDED,P620/640 |

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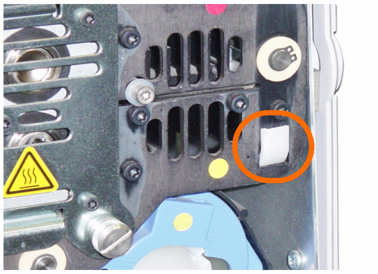
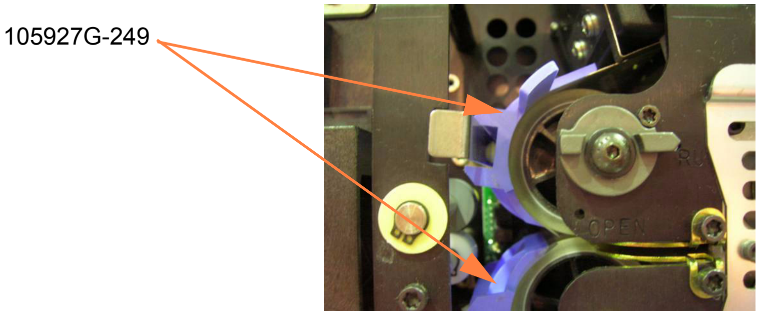
<tr><td colspan="2"></td></tr>
<tr><td>105927G-442</td><td>KIT,LAM GUIDE EDGE</td></tr>
<tr><td colspan="2">
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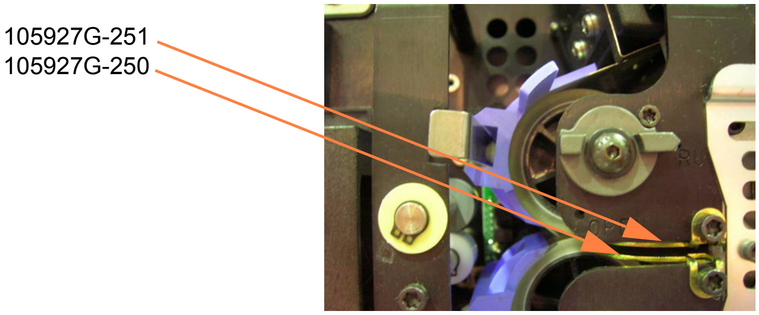
<tr><td colspan="2">
105927G-251
105927G-250

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<tr><td>105927G-251</td><td>KIT,GUIDE,MEDIA,UPPER</td></tr>
<tr><td>105927G-250</td><td>KIT,GUIDE,MEDIA,LOWER</td></tr>
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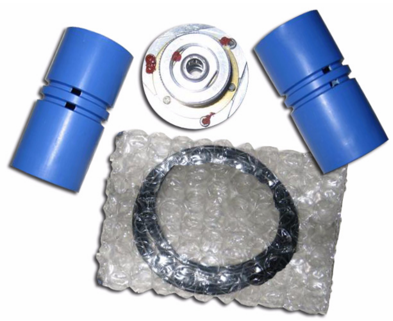
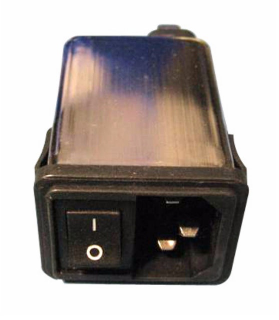
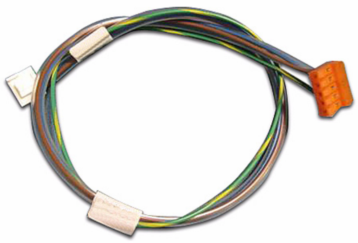
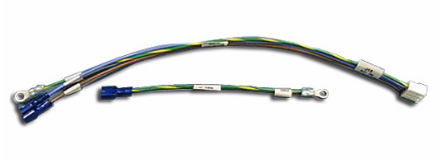
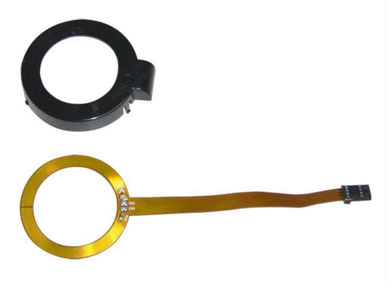
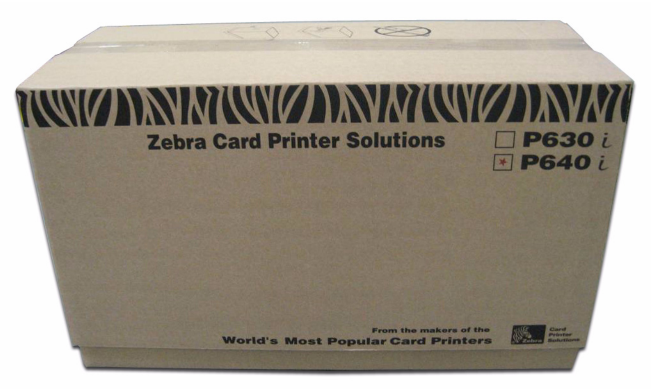
# Miscellaneous

| Kit # | Description |
|---|---|
| | |
| 105927-010 | KIT,LUBRIPLT GREASE,LAM |
|  | |
| 105927-430 | KIT,ASSY,CLUTCH BURN-IN TOOL |
|  | |
| 105927G-205 | KIT,FILTER AC INPUT MODULE |

| Kit # | Description |
|---|---|
|  | |
| 105927G-206 | KIT C/A, AC CABLE TO PWR SUPPLY |
|  | |
| 105927G-432 | KIT C/A, AC CABLE TO MAIN PCBA |
|  | |
| TBD | KIT, RFID ANTENNA |

# Shipping Carton

| Kit # | Description |
|---|---|
|   Zebra Card Printer Solutions<br>☐ P630 i<br>☒ P640 i<br>From the makers of the World's Most Popular Card Printers<br>Zebra Card Printer Solutions | |
| 105927-414 | KIT, PACKAGING P630I/P640I |

# Appendix H

# Worldwide Support

For Technical Support or Repair Services, contact the appropriate facility listed below.

## North America - Technical Support

Zebra Technologies Card Printer Solutions
1001 Flynn Road
Camarillo, CA 93012-8706 USA

Phone: +1 800 511 9909
email: techsupport@zebra.com

## North America - Repair Services

Before returning any equipment to Zebra Technologies Corporation for in-warranty or out-of-warranty repair, contact Repair Services for a Return Materials Authorization (RMA) number. Repack the equipment in the original packing material, and mark the RMA number clearly on the outside. Ship the equipment, freight prepaid, to the address listed below:

Zebra Technologies Card Printer Solutions
1001 Flynn Road
Camarillo, CA 93012-8706 USA

Phone: +1 800 452 4034
+1 805 578 1201
email: repair-ca@zebra.com

## Europe, Middle East, and Africa - Technical Support

Zebra Technologies Card Printer Solutions
Zebra House, Unit 14, The Valley Centre
Gordon Road, High Wycombe
Buckinghamshire  HP13 6EQ, UK

| | |
|---|---|
| Phone: | + 44 (0) 8702 411527 |
| e-mail: | cardts@zebra.com |

## Europe, Middle East, and Africa - Repair Services

Before returning any equipment to Zebra Technologies Corporation for in-warranty or out-of-warranty repair, contact Repair Services for a Return Materials Authorization (RMA) number. Repack the equipment in the original packing material, and mark the RMA number clearly on the outside. Ship the equipment, freight prepaid, to the address listed below:

Zebra Technologies Card Printer Solutions
Pittman Way
Fulwood, Preston
Lancashire  PR2 9ZD, UK

| | |
|---|---|
| Phone: | + 44 (0) 177 2 69 3069 |
| FAX: | + 44 (0) 177 2 69 3046 |
| email: | ukrma@zebra.com |

## Latin America - Technical Support

Zebra Technologies Card Printer Solutions
9800 NW 41st Street, Suite 220
Doral, FL 33178

| | |
|---|---|
| Phone: | + 1 305 558 3100, extension 2821 |
| e-mail: | techsupport@zebra.com |

## Latin America - Repair Services

(Please contact North America Repair Services.)

## Asia Pacific - Technical Support and Repair Services

Before returning any equipment to Zebra Technologies Corporation for in-warranty or out-of-warranty repair, contact Repair Services for a Return Materials Authorization (RMA) number. Repack the equipment in the original packing material, and mark the RMA number clearly on the outside. Ship the equipment, freight prepaid, to the address listed below:

Zebra Technologies Card Printer Solutions
120 Robinson Road
#06-01 Parakou Building
Singapore 068913

| | |
|---|---|
| Phone: | + 65 6885 0833 |
| e-mail: | esoh@zebra.com |

# Website

www.zebracard.com